CURRICULUM
IN
TRANSACTION

REPORT

OF

IN-COUNTRY NATIONAL TRAINING WORKSHOP

IN

CURRICULUM DEVELOPMENT

(1-27 MAY 1978)

National Council of Educational Research and Training

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Foreword

Nothing is more difficult in the field of education than to plan and develop suitable curriculum for the various groups of people coming from different sections of the society and of different ages, cultures, etc. Usually, curriculum has been taken for granted in schools and people rarely care to think what the implications are of a curriculum which is not living and reacting with the life of people around. UNESCO's Regional Office for Education in Asia located in Bangkok had taken up under its Asian Programme of Educational Innovation for Development the task of putting across this idea of a living, reacting, relevant curriculum to the educators in Asia. They had organized the orientation of some top Asian educators from the different countries of the region, who in their turn have in their respective countries, organised seminars to pick up, nationally, curriculum workers who will undertake the regeneration of school curriculum in their respective centres. It was with this end in view that the Udaipur Workshop was organised by Professor Baqer Mehdi, Shri B.L. Vyas and others. As a result of the papers presented in the Workshop, including the case studies, which were discussed, it is now possible to bring out a volume like this. I am sure that curriculum workers who are interested in grappling with the basic issues in the development of suitable curriculum, will find this work useful.

Shib K. Mitra
Director
National Council of Educational Research and Training

New Delhi
20 July 1978

Introduction

The In-country National Training Workshop in Curriculum Development represents the second phase of the Mobile Team Workshop in Curriculum Development sponsored by Asian Centre of Educational Innovation for Development (ACEID), UNESCO Regional Office for Education in Asia, Bangkok.

The primary aim of the Asian Programme of Educational Innovation for Development (APEID) is to assist the Member States in creating and strengthening national capabilities in terms of personnel, techniques and management of the development and use of innovations in education linked to the developmental needs of the country. As mentioned in the UNESCO Regional Office Document (ROEA-77 APEID-MTW.CD INF.1, Bangkok, November 1977), one mode of operations to achieve this aim is to organise in collaboration with the governments of the participating countries, Mobile Team Workshops in Curriculum Development for training a national faculty and a core of curriculum developers through inter-country study visits followed by intra-country training workshops. After fielding four such workshops for Afghanistan, Nepal, Bangladesh, and Thailand in 1975 and 1976, the ACEID fielded a similar workshop for India in December, 1977. A team of five Indian specialists visited four countries, viz. Philippines, Japan, Republic of South Korea, and Thailand to study the curriculum programmes and innovative practices pertaining to curriculum development and implementation. The programme was intended to train the team in basic knowledge and skills required to perform their initiatory task in curriculum development. The objectives of the Mobile Team Workshop, as stated in the UNESCO document cited above were to enable the participants to undertake the following activities :

(i) explore and identify innovative curricular practices in the countries visited;
(ii) plan a tentative workshop programme to be organised in their country after the visits;
(iii) organise and conduct national mobile team workshops;
(iv) design innovative approaches and plans for curriculum regeneration, focussing on education for development.

The team submitted their report of the inter-country visits to ACEID at the end of their study-cum-observation programme. The team also planned a tentative programme of In-country Training Workshop at UNESCO Regional Office, Bangkok. On their return, the team engaged themselves in the preparatory work for holding the in-country training workshop. It was decided that the venue of the workshop would be the State Institute of Education, Udaipur, and the workshop would be held from 1st May to 27th May, 1978.

The Director, NCERT who was designated by the Goverment of India as the Director of the In-country Training Workshop, wrote a letter to all the Directors of Education/DPIs of all the States and Union Territories of the country to depute two persons from each State and one from each Union Territory having sufficient background and experience in curriculum development in primary and secondary education. Fifteen States and four Union Territories deputed delegates for the Workshop. Seven States and five Union Territories could not send their representatives. In all, thirty-one participants attended the Workshop. Their names and addresses are given in Appendix I.

The participants were informed well in advance about the objectives of the Workshop which were stated as follows :

(i) to share inter-country and intra-country experiences through panel discussions;

(ii) to explore and identify innovative curriculum practices and examine their suitability in the Indian conditions;

(iii) to design innovative projects and plan for curriculum regeneration focussing on education for development;

(iv) to plan for the changes to be brought about in the content of the subjects of study and in the methods and approaches of studying these subjects;

(v) to evolve a programme in which education could be related to work so as to draw out of it the best in terms of skill and attitude development;

(vi) to evolve evaluation strategies appropriate to educational goals of pupil development and social transformation.

They were also informed about the pattern of the Workshop programme for the four weeks. It was indicated to them that

(i) the first week will be spent in the presentation of experiences of the Inter-country visits by the Mobile Team and presentation of "Case Studies" of primary and secondary school curricula in different States/Union Territories;

(ii) during the second week there will be panel discussions and group work on the themes of panel discussions;

(iii) during the third week there will be intensive group work on designing curriculum strategies suited to a few differentiated situations like rural-urban, slum, scheduled castes and scheduled tribes, etc;

(iv) the major activity in the fourth week will be presentation of group reports, discussions and finalisation of the Workshop Report.

Each participant was requested to bring along with him a Case Study on curriculum development and its implementation in his State/Union Territory. Guidelines for preparing the case study were also sent to them. The presentation of case studies by the participants in the first week of the Workshop proved to be a very useful exercise insofar as participants from each State/Union Territory got acquainted with the programmes and practices in curriculum development in other States/Union Territories. The programme in the remaining three weeks was also tailored to suit the training needs of the participants. The panel discussions were of a high quality, as we could get experts in the field from all parts of the country to help us. Group discussions also proved to be stimulating and useful.

Acknowledgments

As Coordinator of the Workshop I take this opportunity to thank Shri B.L. Vyas, Director, State Institute of Education who was also a member of the Mobile Team for providing the necessary facilities and amenities for successfully conducting the Workshop at Udaipur. I am also thankful to Dr (Km.) M. Shah who could attend the workshop. Thanks are also due to the participants who took exceptionally keen interest in the Workshop and were mainly responsible for making the programme a success. The resource persons who very kindly agreed to help us during the Workshop also deserve our sincere thanks.

I am also very grateful to the Director of the Workshop who provided me with all the facilities and encouragement to hold the Workshop. I should be failing in my duty if I do not thank Dr. Thamrong Buasri, ACEID Consultant who visited Udaipur during the last phase of the Workshop and was a source of encouragement to all the participants. In the end, I should also like to express my deep sense of appreciation and gratitude to my colleagues Shri B.S. Rawat, Shri K.R. Vasnani and Shri Satish Yadav, JRF who made it possible for me to get the report done and completed in time. But for their sincere efforts it would not have been possible to bring out this report in its present form.

BAQER MEHDI

Faculty Team

1. Prof. Shib K. Mitra *Director*
2. Shri B.L. Vyas
3. Dr. (Km) M. Shah
4. Dr. D.S. Muley
5. Dr. R.D. Shukla
6. Prof Baqer Mehdi *Coordinator*

Schedule of the Workshop Programme

Monday, May 1, 1978

Session I	
10.00 A.M. to 11.00 A.M	Registration
11.00 A.M. to 11.15 A.M.	Tea Break
11.15 A.M. to 12.30 P.M.	Introduction of participants and the resource faculty team.
LUNCH BREAK	
Session II	
2.30 P.M. to 3.30 P.M.	Orientation about SIE and Vidya Bhawan Campus.
3.30 P.M. to 4.00 P.M	General information about board and lodging, and library facilities, etc.
4.00 P.M. to 5.00 P.M.	Finalisation of schedule of work.

Tuesday, May 2, 1978

Session I	
9.30 A.M. to 10.30 A.M.	Inauguration
10.30 A.M. to 11.00 A.M.	Tea Break
11.00 A.M. to 12.00 Noon	Keynote address by Dr. Shib K. Mitra, Director, NCERT, New Delhi
12.00 Noon to 12.30 P.M.	General discussion
LUNCH BREAK	
Session II	
2.30 P.M. to 5.00 P.M.	Observations of the Mobile Team regarding inter-country visits, and discussion.

Wednesday, May 3, 1978

Session I	
8.00 A.M. to 10.30 A.M.	Discussion on keynote address
TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	Presentation of case studies and discussion (3 States).

Thursday, May 4, 1978	
Session I	
8.00 A.M. to 10.30 A.M.	General discussion on problems related to curriculum development.
TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	Presentation of case studies and discussion (3 States).
Friday, May 5, 1978	
Session I	
8.00 A.M. to 10.30 A.M.	1. Exchange of views on expectations of the participants from the workshop. 2. Presentation of case studies and discussion (2 States)
TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	Presentation of case studies and discussion (2 States and one Union Territory).
Saturday, May 6, 1978	
Session I	
8.00 A.M. to 10.30 A.M.	Presentation of case studies and discussion (3 States)
TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	Presentation of case studies and discussion (2 States and 1 Union Territory).
Sunday, May 7, 1978	Field Trip (Chittorgarh)
Monday, May 8, 1978	
Session I	
8.00 A.M. to 10.30 A.M.	Panel discussion: "Teacher Participation in Curriculum Development."
TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	Presentation of case studies and discussion (1 State and 1 Union Territory).

Tuesday, May 9, 1978

Session I	
8.00 A.M. to 10 30 A.M.	Panel discussion : "Instructional Materials and Techniques Relevant for the Use and Implementation of Curriculum".
TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	Presentation of case studies and discussion (4 States).

Wednesday, May 10, 1978

Session I	
8.00 A.M. to 10.30 A.M.	Panel discussion: "New Trends in Curriculum Development—General"
TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	1. Presentation of case studies and discussion (2 States). 2. Group work.

Thursday, May 11, 1978

Session I	
8 00 A.M. to 10.30 A.M.	Panel discussion : "Innovative Practices in Curriculum Development—General."
TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	1. Presentation of case studies and discussion (1 State and 1 Union Territory). 2. Group work.

Friday, May 12, 1978

Session I	
8.00 A.M. to 10.30 A.M.	Panel discussion : "Innovative Practices in Curriculum Development in Different Subject-matter Fields",
TEA BREAK	

Session II	
10.50 A.M. to 1.30 P.M.	1. Presentation of case studies and discussion (1 State). 2. Group work.
Saturday, May 13, 1978 and Sunday, May 14, 1978	Field trip to Mt. Abu
Monday, May 15, 1978	
Session I	
8.00 A.M. to 10.30 A.M.	Panel discussion : 'Problems and Issues Concerning Universalisation of Primary Education with Special Reference to Curriculum Planning and Implementation".
Tea Break	
Session II	
10.50 A.M. to 1.30 P.M.	Group work
Tuesday, May 16, 1978	
Session I	
8.00 A.M. to 10.30 A.M.	Group work
Tea Break	
Session II	
10.50 A.M. to 1.30 P.M.	Panel discussion : "Community Involvement in the Implementation of School Curriculum".
Wednesday, May 17, 1978	
Session I	
8.00 A.M. to 10.30 A.M.	1. Presentation of case studies and discussion (2 States and 1 Union Territory). 2. Group work
Tea Break	
Session II	
10.50 A.M. to 1.30 P.M.	Panel discussion : "Curriculum Research and Evaluation-I".
Thursday, May 18, 1978	
Session I	
8.00 A.M. to 10.30 A.M.	1. Group work. 2. Panel discussion: "Curriculum Research & Evaluation-II",

TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	Panel discussion. "Vocationalisation of Education at Different Stages—Nature and Methodology".
Friday, May 19, 1978	
Session I	
8 00 A.M. to 10.30 A.M.	Panel discussion: "Curriculum for Rural Development".
TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	1. Group work 2. Presentation of Group Reports.
Saturday, May 20, 1978	
Session I	
8 00 A.M. to 10 30 A.M.	Presentation of Group Reports.
TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	Presentation of Group Reports.
Sunday, May 21, 1978	Field trip to Haldighati and Nathadwara Temple.
Monday, May 22, 1978	*Holiday* (Meeting of the Editorial Committee)
Tuesday, May 23, 1978	
Session I	
8.00 A.M. to 10.30 A.M.	Plenary session and preparation of final report.
TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	Plenary session and preparation of final report (continued)
Wednesday, May 24, 1978	
Session I	
8.00 A.M. to 10 30 A.M.	Discussion with the UNESCO Consultant

TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	Discussion with the UNESCO Consultant
Thursday, May 25, 1978	
Session I	
8.00 A.M. to 10.30 A.M.	Finalisation of Workshop Report
TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	Finalisation of Workshop Report
Friday, May 26, 1978	
Session I	
8.00 A.M. to 10.30 A.M.	Finalisation of Workshop Report.
TEA BREAK	
Session II	
10.50 A.M. to 1.30 P.M.	Finalisation of Workshop Report
Saturday, May 27, 1978	Valedictory Function

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SECTION I

GENERAL

1. INAUGURAL SESSION

2. KEY-NOTE ADDRESS

INAUGURAL SESSION

PROGRAMME

Invocation	
Welcome	Shri M. D. Kaurani Director, Primary & Secondary Education, Rajasthan
Theme of the Conference	Prof. Baqer Mehdi NCERT
Address by the Chief Guest	Shri Bhanwar Lal Sharma Minister of Education, Rajasthan
Vote of Thanks	Dr. Shib K. Mitra Director, NCERT

The Workshop was formally inaugurated on 2nd May, 1978 by Shri B.L. Sharma, Education Minister, Rajasthan State. The English rendering of his speech delivered in Hindi is given on the following pages.

INAUGURAL ADDRESS

B. L. Sharma

The experts in the field of Curriculum development and education who have spoken earlier here have very clearly explained the importance, utility and pervasiveness of this programme. [I have not the least illusion that I shall be able to contribute something more substantial in this connection.] I am afraid, my ideas may have some digression as well. However, I do not wish to miss this opportunity, and as such would like to express my own views regarding the system of education in the presence of educationists like you who are engaged in the task of educating our children.

Today we find gross indiscipline in every sphere, in our country. We must not hesitate to accept the truth that in spite of all our efforts for the last thirty years, we have not been able to build the nation as desired and our system of education has contributed the least in fulfilling the aspirations of the people. Unemployment of educated youth is a great challenge. After completing the full course of education, the youth still remains unemployed. This creates in him a sense of frustration and dissatisfaction which ends in the form of agitations and demonstrations. I personally feel that our universities are not delivering the goods. As a matter of fact universities must be the centres of intellectual pursuit and they should have the pride of producing citizens who may have the feeling of involvement in the country's developmental programmes. But unfortunately the behaviour of the youth who comes out of our universities is not in tune with the aspirations of the people. No citizen of this nation is satisfied with the activities and behaviour of the university students. Moreover, we are all very much worried about the fate of this country. All over the country there is unrest and we have not been able to find out the correct remedy for it.

This is the crucial problem. I do not think that any change in the curriculum, in the syllabi, and the knowledge imparted to the children in schools will provide a proper solution to this grave problem. Also, I do not think that politicians will be of any help. It is only the persons devoted to the cause of education who should be able to contribute more in this regard. The persons engaged in the work of education are the real builders of the nation. The welfare of the nation depends largely upon the proper guidance you provide to the politicians. Education is not the work of politicians. If the work of education is left to the politicians, things will not go along right lines. [In fact, education is the work of those thinkers of the community who are in constant touch with the society and who know better about the needs, problems and aspirations of the society.] Only those thinkers and teachers can give us proper guidance. Our work (the work of politicians) is to provide facilities to implement the programmes suggested by such thinkers and educationists.

In this connection we should also think about the outcome of our educational programmes. The ultimate outcome of the prevailing system of education is the dissatisfied and incompetent youth. It is my personal experience that an average graduate of today has no competence to write correctly an application in the language of his own choice. After all, what are the aims of our education? What do we want to achieve through education? Where do we want to lead the nation? Will this system stand the test of the time to come? If this situation is allowed to continue what would happen to our nation, this is a crucial problem requiring your consideration.

Unfortunately, our children and youth remain neglected throughout. An average child does not get the love of his parents. In schools also children do not get proper treatment. It is my personal experience that present day teachers treat teaching as a vocation. But teaching is not merely a vocation—rather it is a work of devotion and dedication. As such it is my humble request to all the teachers and the workers who are engaged in the task of education to treat teaching not merely as a vocation but as a life-time mission upon which would depend the progress and well-being of this nation.

While discussing the role of the teacher, I would also like to mention that our teachers are also neglected by the society they live in. It is my earnest desire that our teachers must get a respectable place in the society and as Minister of Education if I could do something in this regard I would feel that I have done something good in my life. But here I would like to point out that respect can be commanded and not demanded. A person gets respect through his work and behaviour. While talking to teachers I generally tell them that they will earn respect by their own sincere work and devotion.

I may also state before you that not only the society and the children are responsible for the grave problem of indiscipline and unrest, but our teachers also share this responsibility and they are equally responsible for this state of affairs.

A teacher should not behave in the manner workers of any other department behave. He should not copy the style of their working. The work of a teacher is totally different. His life is of a devotee and his work is devotion and dedication. How can he compare his life with the life-style of those persons in whose life the word 'devotion' does not exist? A teacher has selected the work of teaching at his own choice. Nobody has compelled him to select this job. If a teacher feels dissatisfied he may change his job. But as long as a person remains a teacher he shall have to behave in an ideal manner. And if it is not practised by the teaching community, I am afraid, even God cannot save this country. In my opinion only the teachers can put our country on the right path.

All of us who are engaged in different pursuits in our life are the products of the Institutions we call schools, where our lives are in fact shaped. The society, as we see, is also the product of those institutions and now it is high time to take proper care of these institutions and improve the quality of their products. It is one of the most urgent needs of the nation that our schools should produce citizens of high calibre and moral character. A teacher must have the courage to say that his students irrespective of how they are placed in life would always prove faithful, dutiful, honest, and hardworking. The workers who are engaged in the task of educating the children must give this guarantee to the nation. And if they are prepared to give it, how much labour and hard work they shall have to put in i, beyond my imagination. I cannot suggest any measure in this regard as this has never been my subject. It is you the educationists who are the proper authority to think and evolve correct procedures to achieve the desired goals. This is the challenge and we as humble workers in the field of education shall have to accept this challenge. There is no other way out.

It is a matter of great surprise that there are groups among teachers, and it is more surprising that our teachers have adopted the practice of trade unionism and have started organising demonstrations and agitations. Really it is not a good practice. Teachers must always keep in mind that when they come out on the roads and their own students and children see them shouting slogans like 'Zindabad' and 'Murdabad', it creates a wrong impression on the minds of the young generation and they will certainly learn all bad things which would afterwards come out in the worst form of agitations.

To organise demonstrations and agitations is not the work of the teacher. It is true that the teachers are facing many hardships and problems. But agitation is not the correct remedy to solve any problem. This is the responsibility of the Government to look into the problems of teachers and I personally own this responsibility, but I would not like to see teachers organising demonstration etc. Teachers are the real builders of the nation and I am afraid when they come on the roads the task of nation-building will never be accomplished. It is only an illusion that the politician will build the nation. In fact, this is the task of teachers. Only teachers can direct the nation on correct lines and give us proper guidance. If the teachers do not accept this responsibility and leave this task for others the whole nation will be confused and our goals will not be achieved.

KEY-NOTE ADDRESS

Prof. Shib K. Mitra

Prof. Mehdi and friends,

It is good of you to ask me to give a key-note address. Actually, I am not very much in favour of key-note addresses. There are occasions when there is a key-note, then you stress that note. But this is not an occasion for that because there is no one key-note. So I would like to speak to you generally about what I think are the important aspects of curriculum construction and development, from my experience as well as from whatever little I have seen in different countries. Some of these countries have been visited by the very distinguished faculty that you have and they will be speaking to you from their first-hand knowledge and experience also.

Today in education we are faced with the problem of curriculum. We have been talking about making curriculum relevant relevant to the community. All curriculum workers everywhere talk about curriculum being relevant to the community. How is this to be done? What can be considered as relevant? It is not a very easy task to make curriculum relevant to the community. Take for instance, what kind of curriculum will be relevant to the villages as against the cities of India, or what sort of curriculum will be relevant for the fishing village of Kerala, as against the apple orchards of Kashmir; what sort of curricuium will be relevant for the tribal population of Madhya Pradesh, as against the sophisticated population of urban Bombay. Now, in other words, this is one aspect of the curriculum construction work, namely, to identify the community in terms of its social, developmental, economic and cultural characteristics. And India is certainly a very heterogeneous country from that point of view. We have various communities here, communities which are defined in terms of geography, history, language, religion, caste, creed and what not. One can then say that if we develop curricula for these various communities, we will have a series of curricula. You go 200 miles, and the curriculum then will be different. Is this what we really mean when we are talking of relevant curriculum? Then Rajasthan may itself have ten different varieties of curriculum, if not more. And if you take the whole of India, perhaps you will have 300 varieties of curriculum, if not more. Do we really mean this when we say that curriculum should be relevant to the community, because it has its obvious implications? It means that we should accept the idea that there should be decentralisation of the process of curriculum-making because I cannot claim to know all the communities nor can you. Sitting in the state capital as most of you are, you cannot even claim that you know the communities all the communities living in the state well enough to really develop curricula for them. It means that it should be a district level operation and one can push the logic further. In some of the districts even, there are some heterogeneous elements so that it can go down to the taluka level- complete decentralisation in curriculum making.

There is an advantage in decentralisation in the sense that people can really participate in the making of curriculum. Again another principle which we so often talk about, that in making a curriculum we should have the participation of those who matter, those whom the curriculum is going to touch, those for whom the curriculum is made, be they parents, be they teachers, be they other educators in the community – even businessmen and industrialists. It is very difficult to have this in a centrally prepared curriculum. If we decentralise, then we can have this participation; we can involve the local community in the making of the curriculum. In our country it poses a different problem. Because of the high degree of illiteracy, there is a problem in involving the community and making them participate in curriculum making for formal schools--and we are talking about the formal schools just now. So the formal school curriculum cannot be helped by these people and they are in larger numbers in our country, the tribals, scheduled castes, scheduled tribes, the backward classes of the community, those who are dependent on agriculture, landless labourers and so on, who form the bulk of the population, who live below the poverty line and who also form the bulk of the population who are illiterate. Now they cannot obviously help us in making a curriculum for the formal schools. There is thus one restriction which immediately comes to mind, although in principle we all would like to do it if we want to decentralise the curriculum making process and if we mean this by relevance. Now this is one kind of issue which you must grapple with. Let it not just remain a theory; principles you should talk about, but let us come to practice because as curriculum makers, as curriculum developers or as persons incharge of these things in the states, you will have to face this problem, and you will have to ask yourself this question Is this the right thing to do? Take for instance, is it right to have rural curriculum separate from urban curriculum? This question has been argued at length, even in national level conferences; we have argued about it, that there should be at least two kinds of curriculum. Even if the curriculum is centrally prepared, there should be at least two kinds of curriculum, one for the rural India and the other for the urban India. And the counter argument obviously is that we do not want second class citizens, because the rural curriculum obviously will be lower than the urban curriculum. This gets related to the whole question of standards. The urban schools have very good implements, very good laboratory apparatus, visual equipment and so on for teaching mathematics, physics, modern chemistry, modern biology. Can you teach the same thing in a village school, in an improverished village school? You can't. And yet at the same time, if the same syllabus and the same book and the same set of experimentation is prescribed, making this irrelevant to the village community, would we not be forcing the students of that community to react in a manner which is shown in the form of rejection of the school. They are bound to get out of the school. They are the drop-outs. For them, this means nothing because the teacher can't teach well, the equipment is not there, the books are not understood, the vocabulary level is high; it is not at all relevant to the community around them. Then what happens to the standard? If we really take the village school as the standard, then even the ten percent of the population who are city dwellers, and they are as good Indians as anybody else, they will be deprived of having the high standard which they can achieve. So related to this problem of relevance, of decentralisation of curriculum is also the question of standard. As soon as we think of decentralised curriculum, we just imagine that we have decentralised curriculum making in India, and within a state curriculum making is decentralised from the state institutes down to the district level. So each district in the state has then one centre for curriculum, where the people are involved in curriculum making as they ought to be and curricula are developed there. Just imagine this situation. Immediately what will come to your mind is the question of standard. Is the standard of district 'X' comparable to the standard of district 'Y'? Is the standard of state 'X' comparable to the standard of state 'Y'? Already we are talking of this variation in the Boards of Secondary Education, that they do not have the same standard and therefore every year annually all the Secondary Education Boards meet, and the national standard is talked about. This is today's situation when we have centralised curriculum making. What will happen if we go to further decenlised curriculum making? These are inter-related questions.

If you look historically, it is very interesting that when Western education was introduced in India, the British introduced this in the three Presidency areas, the Bengal Presidency, the Bombay Presidency and Madras Presidency. And in these Presidency areas when they introduced this Western education, they introduced the office of the Director of of Public Instruction. The office of the Director of Public Instruction regulated and controlled all syllabi and books and the hours of schooling, etc. The DPI was the all powerful person and nothing could be done without his office order. There was a very good reason why they did so. It was a colonial rule and they thought that the natives cannot really decide because their education system is very different. They thought they knew what was good for us they thought we were the illiterate people, non-urbanised, and less-cultured, and so they took this view, that decision-making should be centralised and that is how the educational administration developed. What is the administration today? It is still the same. It is still this centralised model that we are running and you can immediately see the parallel that we who sit in the state headquarters or in the national headquarters or in the Central Board of Secondary Education or State Board of Secondary Education, we immediately say, well, they really cannot decide, we can decide for them. The attitude is the same. This is contrary to democracy, this is contrary to the value system that we want to incorporate in our curriculum. If the main objective of our curriculum in the school is to make individuals free and happy and develop their fullest potential, then this obviously gives them the opposite view, by making them feel that there is somebody else, a group who knows better and they decide for us. And, therefore, there is every reason why we should decentralise curriculum making, because that is philosophically and ethically, value-wise a justifiable proposition as against the current practice of centralising curriculum making. But the issue is, is this desirable? Although from the point of view of pedagogy, from the point of view of education, from the point of view of values, this may be all right, yet is this a feasible proposition or is it a desirable proposition from other points of view? This is the question. How do you visualise the situation when it is all decentralised? Is it possible to maintain some sort of coordination? How do you maintain that coordination so that there is not that much of variation? Otherwise, it is quite likely that differences will increase further. There are pros and cons on both the sides. So this I am placing before you as a major problem to grapple with. I am sure you will discuss in this context what your experiences have been in other countries, what you have seen in other countries, how much of that can be considered as relevant for us.

The other thing is, when you judge relevance, it is in terms of what. Relevance is in terms of needs,—needs of the community. But how do you judge the needs of the community? You ask them and they will tell you what they want, and there is a difference between need and want. The people will tell you, we want water, we want school building, we want a teacher, we want this, we want that—which is different from your perception of what they need, just as in the case of the child. If you ask the child, what you want—the child will say chocolate, sweets or something else But you perceive that the child needs protein and that is not what the child will say he needs. So differences like this exist in every country. I am particularly talking of our country, where people are largely illiterate, people are still steeped in superstition, darkness and ignorance So, although pedagogically, from the point of view of principles of curriculum making, we may go to them and ask them and involve them, and all that, we should be clear in our minds what is happening when they are participating. What are they telling us? Are they telling us the things which will lead to their development? It is very strange but in human life it is very true though, that all of us do not all the time feel the need for things which we really ought to. We want things which we may not require at that moment. So you have this kind of dilemma also to solve, as soon as you think of involving teachers, community educators, and parents in curriculum making.

Then you have this problem which the Minister was referring to, apart from the problems of relevance which is one of the contemporary problems we have, such as centralisation versus decentralisation of curriculum making, and so on. You have this other problem of values. What set of values, whose values,--how to identify the values, how to see that the values get into the curriculum, by what methods. Should this be all in the textbooks? Should this be a part of the formal instructional process and this is where we know from our research evidence, that much of value learning takes place outside the school. Much of value learning takes place in the home, in the neighbourhood and so non-formal education becomes important in this context, out of school activities become important in this context. So when you think of curriculum, if your restrict it only to formal classroom instruction, it will be a very narrow view of curriculum which you will be taking. You will have to consider also the other activities in the school which are called extra-curricular activities, or co-curricular activities and even out of school activities. Can we think of curriculum in these terms? Can we think of a curriculum in non-formal education? Or, is the concept of curriculum foreign to the concept of non-formal education? There is a problem here that non-formal education is not just accidental learning. Non-formal education also is a situation which is arranged except that it does not lead to a degree or diploma or a certificate of the kind usually given by the school or college. It is outside the school or college. But it is also a systematic effort, well arranged effort, to give people something which is relevant to them which they are not getting otherwise in the formal schools. If they are getting this in formal schools then there is no need of non-formal education. This is where you have a problem in India. If you look at the number involved—we have today 97.5% of the children in the age-group of 6-11 years covered by a primary school within the walking distance of the child, when walking distance is defined as 1.5 Kms. from the child's home. As of Third All India Education Survey dated 31st December, 1975 this is the figure, so the schools are there for children. But you know very well that children are not enrolled 100%. In many states like Kerala there is 100% enrolment but in some states like Bihar, the enrolment itself is very low, particularly among the backward sections of the society and the girls. And if the enrolment is low, and you further look into attendance, you will find that attendance is still lower, and then you find that children not only do not attend school regularly, they drop out and the national average comes to around 45%. The rate of drop-out is as high as 78% in Bihar. 78% of the children of the age-group 6-11 disappear from the school before they reach the age of 11 There are eight states in India which have been identified as backward in this respect from the point of view of enrolment, attendance, the rate of drop-out, and adult literacy figures. Concerted attempts are being made to see that in the Sixth Plan these states improve. But in most of the stages, the problem remains that although schooling facilities exist, the children either do not go to school or if they go, they get out of the school. Why do they drop out of the school? There are many economic reasons, poverty being one. They drop out to work in the factory or farm of the parents. So we are forced to consider the possibility of non-formal education because they are not in the school, they are not going to come to the school. This is a very large segment of population. So though we are providing schools for 97.5% of the children, in fact schools are there for only 40% of the children,—60% are not there. The only alternative is not to do anything for them—they are not in the schools, so we throw up our hands in despair, but that is not the attitude one should have and that is why the Government of India is talking of non-formal education in a big way to provide for learning opportunities to those children who have dropped out so that some kind of education takes place. Naturally, you have to think of what should be the proper way of making a curriculum for such situations. We know very well how to make curriculum for the formal school situation, where instructional hours are fixed, the place is fixed, institutional arrangements exist till the formal examination and all that sort of things. But how to go about this in a non-formal educational system is still an open question, and I wish that you could spend some time on this too and discuss among yourselves and find out what are the possible ways you can go about doing this because this has got to be done in our situation. There is no way out.

You will find another problem, problem peculiar to our country especially. You know the Government of India appointed a Committee with Dr. Ishwar Bhai Patel, the Vice-Chancellor of Gujarat University as its chairman to review the NCERT ten-year curriculum, and the Patel

Committee report is available. One of the most important recommendations of this committee is to provide 20% of the school time for only socially useful productive work. They have discarded the Kothari Commission's concept of work experience. They have on the contrary suggested it should be socially useful productive work, not just work experience. And this should take 20% of the school time, which cuts the time so far as other academic subjects are concerned. Now for a curriculum maker the problem is how to integrate the socially useful productive work with the rest of the school curriculum. This you might remember was the main problem in basic education introduced by Gandhiji, and we had miserably failed; by we I mean educators. It is really we who failed in translating this wonderful idea of Gandhiji into actual practice. Now it is again with us and if we fail this time we are, of course, sunk and there is no way out. Because it is obvious to us that the school children who are being produced by our school system are not fit for any work, apart from the fact that there is a long gap between working life and life in the school which the UNESCO Report 'Learning to Be' had strongly recommended to be bridged, so that when you work, you should also learn and when you learn you should also work; not that when you learn you don't work As we see the net result of our schooling today is that children drop out. Why do they drop out? Because they want to work they have to work. We have to devise the system where working and learning can be combined. Now what kind of curriculum will achieve this, so that socially useful productive work is not just another subject. You have a real problem there in terms of relevance also, that is which work will be relevant to what community. To my mind it is an impossible thing if I say that I know all the varities of work, sitting somewhere in Delhi or sitting somewhere in Jaipur and say these are the kinds of work which the children have to do. So in order to do this, it is very necessary to study the community, the socio-economic factors in the community itself- what are the kinds of occupations they have, what is the kind of economy they have, what are the possibilities there. Luckily for us there is a plan for every district, which tells us in terms of industry, in terms of agriculture, in terms of social services and other things like what are the possibilities that exist in that area. If we can build this into our curriculum, in the school then we will be helping the children to really make their experience relevant for their later development, and it is only then that vocationalisation becomes easy, it becomes one continuous thing leading from socially useful productive work to learning something which is a vocation. This is another contemporary challenge and contemporary issue that we are facing The important aspect of this is that you cannot think of education today without textbooks. But once you come to socially useful productive work, it is very difficult to think of textbooks, equally difficult to think of a public examination. Just before I came here, I attended a meeting of the Central Board of Secondary Education where they were discussing this problem, they have accepted Ishwar Bhai Patel Committee's report and therefore they have accepted this idea of 20% of the school time being given to socially useful productive work. They have accepted the idea that it should be a compulsory subject for all children of the school whether it is a public school or primary school or missionary school or non-missionary school. But they were grappling with the very difficult notion, to my mind, when they were talking of an external examination. How will you have external examination of socially useful productive work? Just as you cannot have textbook for socially useful productive work, to my mind, you cannot have the external examination. And if you do not have the external examination, they were all arguing – how do you know that work is being done? Everything fell flat. So this is where you get into the crux of the whole problem which the Minister was referring to in the morning speech, the honest aspect of the whole situation. You cannot really bring everything into the curriculum. You cannot also make everything examinable. You cannot provide for inspection of everything very frequently. You have to depend on the honesty of the teachers, honesty of the school, honesty of the supervisor, honesty of the student, honesty of the parents, honesty of one and all. Now this is where we find ourselves in a real fix, because so far, as a result of the colonial experiences, having been a colony for a long period of time, we have learnt to mistrust others. We have learnt all the time not to trust the other person, to be suspicious, and so we have devised an administrative system which is based on mutual mistrust. Unfortunately, this system still continues. But I have personally argued quite a bit that you must give the trust back to the teacher and unless the teacher is trusted, you cannot have any solution to the problems in education. But it is very difficult to sell this idea to administrators. Some of them believe that teachers really do not teach. I do not know how far it is true, but they believe it is true that teachers do not teach. And sometimes it so happens that one does discover teachers not teaching well, going to market perhaps, or doing something else, you know. But these I believe are stray incidents. In a huge country like this where there are 2.5 million teachers, you will of course expect some of them to be not upto the mark just as some of them, quite a number of them, will be excellent by any standard; and 2.5 million is no joke.

And that poses another problem of course, that no matter what you suggest in curriculum, it will involve teacher training. Can you think of a system by which there will be a continuous regeneration of the teachers' own development and personality and not just competency in the subject matter. Much of our in-service teacher education is geared to only subject-matter and methodology Unfortunately this is mere repetition because knowledge is not that quickly generated, in spite of all the protestations made by the scientists, because in school what we do give is a stable knowledge, and not the new little discovery some scientist had made. Now this stable body of knowledge cannot be given over and over again to the teacher He does not need that. There are books available which he can read. Then why do we need in-service education? We need in-service eduction to develop the competence of the teacher in those other aspects, to really help in the process of curriculun development, to really develop learning situations for children to learn, to really help the teacher to develop the child's own personality and help him grow, and last of all to develop confidence in himself as a teacher. "I am an honest man and I can do honest work." Much of the fault lies with our inability to create this confidence in the teacher that the teacher can live honestly. We participate in the general belief in society that you cannot be honest, and live in the society, that you too participate in the dishonesty and the corruption that goes on. So this is a very defeatist spirit and not justified by facts. Certainly, there is no statistical evidence, no study. I for one cannot believe that this big country can be run unless the majority of the people are good: you just cannot run this country otherwise. It is always a minority which according to the normal distribution curve of statistics is below par. Always when you are dealing with large numbers whether it is star, or it is man, the same law will hold, the law of probability.

While considering the whole question of the ethos and culture and value system being reflected in the curriculum, one has to think of this: how can this be done, what is the basis of doing it, and whether it can be done in a school independently of the rest of the society? Can you have a Gandhian education and an un-Gandhian society? I think this is the basic problem. Our basic education lost in this country after grappling for sometime under Congress Government because basically the structure of the society which was exploited was not changed, whereas Gandhi was anti-exploitation. The basic concept of basic educatoin according to Gandhi was, labour yourself, you must produce yourself. That is the spirit. But that was not done. Similarly with *Ahimsa* or Truth. When the entire social fabric is based on *himsa* you cannot teach *Ahimsa* in the school. Because, as I said, values are learnt outside school, in the neighbourhood and in the family. So when as educators, we think in ideal terms that these are the values which ought to get into the curriculum and in the textbooks and instructional materials, we are creating a problem for ourselves, in the sense that we are bound to feel disappointed after sometime and see that nothing is happening, that we did all these good things but nothing happened. And we are creating the problem for children also, and this leads to the question which Ivan Illich has raised in his '*Deschooling Society*', that the school itself is a part of the establishment in the country and therefore the values of the establishment will be reflected in the schools, whether you like it or not. And to what extent then curriculum maker should be a party to this? To what extent then the curriculum of a school should be left in the hands of the school? That is the only way. Perhaps you can be sure that there will be at least some places where real effort will be made to develop new thinking to innovate, to be creative, to have divergent thinking, to produce something which was not before. Otherwise what will happen is, again as Illich points out, there is a mechanical reproduction of the syllabus that is prescribed in the classrooms leading to a mechanical idea of the knowledge as if knowledge means storing certain things in the brain and taking these out when the occasion comes. Knowledge, when created is an endeavour of knowing rather than knowledge, doing rather than having a thing done. If these are the things which you want to see, if you want to see becoming as the aspect of a child's personality, changes and developments are found to take place soon. And now, how the curriculum should be developed and how the school can go on reformulating the curriculum is yet another question. In what way this can be done, what kind of supports are necessary—support from the administrators, support from the Board of Secondary Education, support from the teacher educators, support from the University, because these are the support systems we have for the curriculum in this country. And so this is the last point I am making that whatever curriculum you make, it takes place in a system and in that system you can identify the school as a sub-system where this curriculum is offered. The rest of it is the support system. And therefore as curriculum makers, as innovators in the curriculum if you particularly introduce innovations and new things in curriculum you will have to identify what should be the linkage between school and those other institutional structures in society — the other systems of society. Then only you can meaningfully understand the International Education Commission's Report called '*Learning to Be*' which has been translated by the Tamil Nadu Board as '*Learning Society*'. Actually the whole society has to be a learning society; only then we think of school as being linked to other institutions. Today we do not really have it; as the Minister was saying again, that the father even does not know whether the child goes to the school, he does not care to know. Why blame the father? School is the last thing that people care for. They always insist that there should be a school run by the Government. They always insist that there should be free books or something like that, uniform, and so on. That is about all. After that you can delightfully forget about school except during functions when you want to use the school premises and you want the school boys to sing chorus. So, it is necessary for us therefore, as curriculum makers also to indicate that there should be linkages between the school and the other institutions and we should also know that this should be in what kind, what shape, and what form. Today, for example, there is no linkage between school and the college and the university. School and the institutions which are talking about vocationalisation do not seem to know which should be utilised in vocationalisation. Firstly, linkage between the Agricultural Institutions and the school should be defined, for example. In a largely agricultural country if we really want to make our curriculum worthy, it has to be linked with agriculture. It is easier said than done. Theoretically one can say that link up school with agriculture but precisely how? How can you visualise the school curriculum being linked witk agriculture? It must be through institutions. What institutions? What kind of linkage? And these are very specific issues, concrete issues, to my mind, which one has to face in making any curriculum change, in developing and reconstructing a curriculum. I hope that during the four weeks at your disposal, you will have time to devote to some of these problems if not to all of these problems.

I am sure that as you begin to meet in separate groups and discuss these issues you will run into very deep waters. I, for one, do not expect from you, resolutions. Please do not pass resolutions or make recommendations. I think that is what is self-defeating. Let us not try to do that. I am very satisfied if you have found it profitable to exchange views. It should be an encounter of minds. You are very thoughtful people, reactive people, experienced people. When you can share your experiences you may not agree on many points. It does not matter, but if you end up finally with this feeling that it has made you think, I should think that the UNESCO's purpose in this respect will have been fulfilled. UNESCO Office of Education in Asia which is located in Bangkok has an Asian programme of Educational Innovation for Development which is really nothing but the countries' programmes put together. I have just a few days ago returned from Bangkok where we discussed the next bi-annual programme which they have chalked out. Our Education Secretary was also there. I was also there to place our Indian problems in education. Other countries placed their problems, and then common problems were picked out, and that is how the UNESCO finally decides its own problems. Now it is a part of this Asian programme of work, in which inter-country visitation was one of the items where they had asked us to identify persons within India, and we had identified the distinguished colleagues who are here and they had gone and seen these things in different countries. I am sure that their rich experiences in India as well as in these countries which they have seen, will help you to stimulate your thinking further so that when you go back after this workshop you should feel that you have been enriched. I think this will be the kind of aim I will keep before myself for this particular course.

I must thank you for giving me patient hearing for such a long period of time. It is unusual on the part of the people to concentrate their attention for such a long time. I personally do not like to give lectures for a long time. I rather like to sit down and discuss. But it has given me a great pleasure to be with you here and speak to you about some of the problems which are bothering me, as an educationist, working in this field now, and I hope it strikes a chord somewhere in some of you.

Thank you very much.

SECTION II

CASE STUDIES

1. GENERAL INTRODUCTION TO CASE STUDIES
2. CASE STUDIES OF STATES
3. CASE STUDIES OF UNION TERRITORIES

A General Introduction to the Case Studies

The history of curriculum regeneration in India is of recent origin. It has received momentum and acceleration in post-independence era when social and economic conditions and a new political system quickened the pace of change which has been reflected in the effort to reform or renovate the curriculum. The appointment of a series of Education Commissions and Committees and consequent policy decisions on their recommendations at the national and state levels only point to that direction. The establishment of the National Council of Educational Research and Training in 1961 is a milestone in the field of education in India which has wielded tremendous influence in curriculum regeneration in the states. The network of the State Institutes of Education, State Institutes of Science Education, and also the State Councils of Educational Research and Training grown in the past decade has provided necessary infrastructures in the states to develop their own curriculum models and materials responsive to the needs and aspirations of the people.

Curriculum development does not begin with the planning alone, nor does it end with writing out an operational plan for the school system. The gap analysis, tryout, adjustment, production of textbooks and other instructional materials and teaching learning aids, teacher preparation, evaluation and feed back constitute the cycle of curriculum development and this developmental view of the curriculum is being increasingly recognised in the states.

Education is a State subject in India and therefore it reflects variations in the curriculum development process in the states. Recognising a need to study the experiences which are taking place in different parts of India, this workshop has planned to pool these experiences together and develop an important background material for the curriculum developers of the country. Nominees from the 15 participating States and 5 Union territories have presented case studies at the elementary and the secondary stage of education. Some have specifically dealt with related aspects.

Gap analysis and curriculum regeneration

The state curricula both at the primary and secondary stages have undergone regeneration through a continuous process of planning and development. Curriculum renewal has become a routine feature in the states. It is a general practice in the states to put the curriculum under review regularly after a period of time which of course varies from state to state. The review is often pedagogical in style and no systematic gap analysis is reported for the purpose. Curriculum renewal in the states is needed to make the content more in line with new knowledge and methods in that discipline or to implement policy decisions on education. The curriculum regeneration is therefore pedagogical in outlook and not social in inspiration.

Promotional organisation

In many of the States the promotional organisations in curriculum-making are the adhoc curriculum Committees which are in fact, a part of the government machinery, yet its roles and functions are advisory rather than executive. The S.I.E.'s S.I.S.E.'s or SCERTs generally provide technical support behind the stage Such committees are primarily concerned with planning and recommending operational plans for curriculum to be implemented into the school system. Often these committees are empowered to appoint committees of subject experts and methodologists. Generally the adhoc committees represent a wide cross-section of people including teachers, headmasters, educational administrators, subject experts and methodologists. In some states, the Teachers Associations are also given due representation on the Committees (West Bengal, Tripura). The practice of involving the public in curriculum decision making is yet to take roots in the states.

In some states (Tripura, West Bengal), the Board of Secondary Education is given full autonomy in the statute to formulate its own curriculum at the Secondary stage while in some other cases the State Education Department has a preponderating role in curriculum formalisation (Maharashtra and Gujarat).

Nature of the curriculum

To any scanning eyes, the state curriculum in general may appear merely cognitive in style and application. The courses of study and the syllabus part are conceived as curriculum. Work Experience, Health and Physical Education and Art and Music are often organised as subjects in the cognitive framework of the syllabus and thereby fail to illuminate the curriculum. More often than not, the primary stage curriculum is also conceived as a sequence of learning experiences to realise the general objectives of educacation as well as to achieve instructional objectives. Although these objectives are not operationally defined in most cases, the whole gamut of learning experiences is organised to develop the child as a learner, a person, a worker and a citizen in and through a series of planned situations both in curricular and co-curricular areas (Tripura).

Curriculum innovations

In many states project-based curriculum innovations are being tried out on a moderately macro level. These innovations are principally in the area of science and new mathematics. The project-based and not field-based innovations which are over-emphasised in the case-studies may give one a false impression that the classroom innovations are not tried in the states.

Evaluation and feed-back

Two types of curriculum evaluation are in vogue in the states, namely, the evaluation of the curriculum and the evaluation in the curriculum. Before a curriculum innovation is incorporated into curriculum such as new mathematics, new instructional strategy in science education, tryouts are generally conducted on a micro and a macro level to test its efficiency and effectiveness. This evaluation in the curriculum and feed-back is considered essential by the states going in for its wider introduction. The evaluation of the curriculum as practised in the States are :

1. Continuous institutional evaluation (Gujarat)
2. Traditional promotion-based examinations with changes in paper-setting and weightage.

Some states have experimentally introduced ungraded system at the primary stage, particularly in classes I and II (Karnataka, Orissa, Gujarat, Maharashtra). The switch-over is mostly concerned with the reduction of drop-outs rather than the evaluation of the curriculum.

Participation in the curriculum making

Not to speak of the public, the participation of teachers in curriculum making process is very casual because of official preponderance in the State Curriculum Committees. Teachers are mainly involved in the implementation stage of curriculum. Even though the participation of teachers in curriculum development and evaluation is not totally absent in the states, where curriculum innovations are in operation, there is hardly any institutionalised efforts in the states to educate the parents in curriculum changes.

Work load and incentives

A heavy demand is placed upon teachers in many curriculum innovations which call upon them to play new roles, use new techniques and handle new materials. Motivating teachers, therefore, becomes a key factor particularly at the implementation stage which is hardly emphasised in the presentations. For carrying out additional work load and responsibilities, the provision of monetary incentives to the teachers is also reported from the state of Madhya Pradesh.

Curriculum for non formal education

Non-formal education as an alternative strategy of education has not yet been seriously considered in the states and therefore it often remains outside the scope and jurisdiction of the State Curriculum Committees. Two or more different promotional agencies are working independently of the others in the area of curriculum development, one for the formal group while the other for non-formal group. This dichotomy exists in many states. A successful experiment on how non-formal curriculum can be made more functional and need-based by the community participation and support is reported from the state of Mizoram and this may arouse our curiosity to follow it up closely.

In fine, it may be concluded that despite local variations there is commonality of problems and issues and some broad uniformity in the process of diverse curriculum practice and development permeates all through the states.

Education in Andhra Pradesh
A Study in Curriculum Development

S.T.V. Raghavacharyulu

General features

The Educational pattern in Andhra Pradesh underwent many changes, and the current pattern is as follows: Primary 1-5 classes, Upper Primary 1-7 classes, High School & Secondary Schools 8-10, and Junior Colleges (Higher Secondary) 8 to Junior and Senior Intermediate classes. Usually classes VI and VII form the top classes in the elementary primary schools and the lowest classes in the high schools which do not have Intermediate classes.

In the elementary schools, Mother Tongue and the Regional Language, Elementary Mathematics, Elementary Science, Social Studies and Citizenship, Physical Training, Arts and crafts including Music and Home Science for girls, and Moral Instruction are taught for pupils of classes 1-3. From the fourth class onwards an additional language, usually Hindi or Telugu is taught. From the sixth class onwards, English as the third language is taught. For classes 1-5 some time is allotted for other school activities. Pupils of age 5 plus only are admitted to the first class. Nationalised textbooks are used in all the classes. The syllabus gives adequate and meaningful guidelines to the teachers for handling the various subjects. Suitable practical activities are suggested in all subjects especially in General Science & Social Studies. The syllabus is revised periodically to keep pace with the changing trends in education. This is done by the Syllabus Revision Committees constituted by the State Government for the various subjects and classes.

In the Secondary school or high school classes, the first language will be Telugu/English, Urdu/Kannada/Marathi/Hindi, second and third languages will be from Hindi, Telugu and English. The other subjects included in the curriculum are Mathematics (general or composite), General Science and Social Studies. Provision is also made for co-curricular activities including Physical Education, Hobbies, and Crafts, etc. But these are non-examination subjects. The achievement in all the subjects are noted in the pupil's cumulative records by the concerned schools.

From the year 1969-70 onwards Junior Colleges were started in the former Higher Secondary/Multipurpose schools and a few high schools were upgraded into Junior Colleges. The Intermediate course is of two years' duration but for vocational courses the duration is three years. Among the subjects offered are Geography, Geology, Philosophy, Logic, World History, Modern Language, etc. The Board of Intermediate Education constituted as a Statutory body is responsible for the syllabus, rules and regulations and the conduct of the public examinations. A notable feature of the Junior Colleges is community involvement. Normally high schools are upgraded into Junior Colleges only when the people of the area come forward to contribute a sum of Rs. 50,000 in cash and donate 20 acres of land. The Telugu Academy is responsible for bringing out textbooks and reference books in Telugu while the Urdu Academy looks after the interests of the Urdu-speaking people. Vocationalised courses were introduced in a few Junior Colleges during 1975-76 and at present courses like secretarial work are offered.

Examinations

A common examination is held after the 7th class with the question papers supplied by the Commissioner for Government Examinations and a Public Examination is conducted after the 10th class by the same authority. Flying squads are constituted to check malpractices and spot valuation has been in vogue for about a decade. A new innovation in the field of Examinations is the abolition of detentions in classes other than 7th and 10th. The idea is, that besides arresting wastage and stagnation, the non-detention policy will help students gain some useful knowledge during his 7/10 years of schooling, as attendance to the extent of 90% in the secondary stage and 80% in the primary stage is compulsory for promotion. Internal assessment is given its due place in all the classes. For the 7th class common examinations, 25% weightage is given for Unit tests and 25% for the quarterly and half-yearly examinations. When a student secures not less than 50% marks in the prescribed tests and examinations, the attendance requirement can be reduced upto 60%.

It is often alleged that standards of education have deteriorated after the introduction of the non-detention policy.

The challenge posed by the low percentage of passes at the 7th class common examination and the 10th class Public Examination was sought to be met by the massive and extensive State-wide Academic Programme, which in the earlier years served the purpose of orienting teachers in the methods and techniques of the new evaluation policy introduced alongwith the non-detention policy. The new evaluation policy requires the teacher to prepare yearly, monthly and weekly plans besides Unit plans and lesson plans, and also to conduct Unit tests and term and terminal examinations. In this programme, district-wise courses were organised under the guidance of experts from the SCERT and the Colleges of Education. These in turn conduct courses at the block and village levels. This new approach was introduced from 19 6. From the current year, efforts are being made to train teachers regularly in batches throughout the year with the establishment of the Regional Institutes of Education in the districts. It is also planned to supply single-teacher school staff with necessary materials outlining the methods and techniques to be adopted in working in the single-teacher schools.

Innovations

1. Andhra Pradesh is one of the 15 states participating in the UNICEF-aided projects 2 and 3 i.e., Primary Education Renewal and Developmental Activities in Community Education and Participation, in three districts with ten schools of each district attached to the nearby Teachers Training Institute.
2. A forerunner of the UNICEF programme at least in implementation and vigorous application is the Curriculum renewal project of the Indo-Dutch Project for Child Welfare. The syllabus approved is being tried in schools around Shankerpally and Chevella areas of the Hyderabad district. Textbooks and guide books were specially prepared for this purpose. An innovating feature of this curriculum is the provision of learning experiences in the fields of agriculture, animal husbandry, and industries with stress on a more useful and healthy life for the child. An effective in-built system of evaluation has been designed with a simple and practical set of records to be maintained for each pupil alongwith a manual of instructions for the teachers. The new primary science curriculum expected to come into force in a year or two is essentially an environment-oriented science education programme to make children effectively interact with the changing environment and face the problems of daily life with confidence. The focus of attention is on MAN AND HIS NEEDS. It is also proposed to integrate Science with Work Experience Programmes.
3. Jawahar Bal Bhawan, a recreational & educational centre situated at Hyderabed is yet another innovation directed to provide non-formal education to school-going as well as other children.

School broadcasts

AIR Hyderabad and its other three sections have been broadcasting educational programmes to the Primary and Secondary school children as well as for the teachers daily. These programmes are designed in consultation with the E.T. Cell of the SCERT. Programme details and guide books are sent to schools in the beginning of the academic year.

Work experience

From 1971-72 a pilot project was introduced in 15 schools in the Hyderabad and Secunderabad districts and in 10 schools in the Hyderabad district. A similar centrally-sponsored scheme is being implemented in some schools in the Guntur district.

Residential schools for the weaker section

To help bright students from the backward areas and sections and to impart the best possible instruction to them residential schools have been started at four centres, viz., Tadikonda, Kinnerasani, Kodigenahall, and Surveil. Entrance is by means of a test and students are given free board and lodging facilities, books and instruction. It is gratifying to note that 95% of these students passed their 10th class Public Examination with first class.

Problems and issues

1. Existence of a sizable number of single-teacher schools.
2. Shortage of teachers in a few subjects like Science and Mathematics.
3. Difficulty in providing textbooks for linguistic minorities.
4. Reluctance of the teachers to work in rural areas.
5. Lack of proper accommodation for schools.
6. Lack of hostel accommodation.
7. Over-crowding in some schools specially in urban areas.
8. Lack of furniture and equipment.
9. Lack of servicing centres for equipment.
10. Apathy on the part of some teachers to try new innovations.

Children not in the Day School : How We Reach Them —A Case Study (Andhra Pradesh)

G. Suryanarayan Murthi

Two changes were introduced in Andhra Pradesh to tackle the problem of children who were not in school. They are: (1) Evening/Night primary schools with teaching facilities for classes 1 to 5 and (2) Non-formal education.

1. Evening/Night Schools

The evening/night primary school is, in fact, a formal school with shortened and changed timings as the name implies. It is essentially a single-teacher school.

The objective of this scheme is to provide opportunity to children who are otherwise unable, due to various reasons, to attend the formal day-school.

The promotional procedure is to start the school in a place where there is a day-school with multiple teachers, at least more than two. The co-operation of the community leaders was sought for the purpose of encouraging pupil enrolment.

The problems faced here are :

(i) The pupils would be tired while attending the evening school and may be unable to devote the expected attention for the classroom activities.

(ii) The working time is almost half of any other single-teacher day-school.

(iii) Much time, when there is still day light, cannot be devoted for such activities as can be undertaken in the day-school.

(iv) Since the syllabus is the same as that of a day-school the teacher should be very resourceful in planning the teaching-learning activities, partly by himself and partly by other devices such as monitorial teaching, assignments, etc.

(v) Since the pupils may not have sufficient time for doing assignments at home, most of them are to be completed during the comparatively shorter time of the evening school.

(vi) There is a tendency of pupils to absent themselves or to drop out of the day-school and join the evening-school.

(vii) If the location of the day-school is distant from the village habitation an alternative place is to be found.

The impact is yet to be assessed.

2. Non-formal education

The second scheme is for children who have not gone to school or have gone and dropped out. This is a non-formal approach for the age group 6-14. The scheme is not yet implemented. The teacher would be either a part-time teacher of the community or an educated unemployed.

The problems posed are :

(i) Children of the same age but with different achievement levels would be participating.

(ii) The objective is not merely equipping the child with certain social competencies which would be adequate even if he would not continue further study in a formal school but also to enable him to join a suitable stream of formal education, if and when he desires. Thus multiple entry is also an objective.

In order to solve this problem it was proposed to prepare modules or self-contained packages, 30 in each subject, based upon the prescribed syllabi. For this purpose classes I to IV are taken as one segment and classes V to VII as the other. Each module is to be completed in 2 hours. The content area is recast under some major concepts such as environmental perception, location, regional development etc. Major and minor generalizations are listed. Each unit has a module meant for the student as also for the teacher. The student module contains basic information that leads to his making generalizations. It also contains some enriched content. The teacher module is essentially a brief guide for the teacher where specific generalizations and ideas are stated and suitable learning experiences and teaching aids indicated.

As the scheme is about to be implemented the impact is not yet known. It is hoped that teaching would be made comparatively precise while the module would cater to the individual needs.

Curriculum Development at the Elementary Stage in the State of Bihar

Dr. Mahtab Ali

Background

Bihar is a State which has faced educational experiments several times, but it has not yet got rid of experimentation. Bihar was the citadel of Basic education. It is true that there was a time when it took the lead in translating this pattern into action. But after ten years of independence this pattern deteriorated. The education department felt that there was practically no difference between Basic and traditional schools. So the department introduced an integrated syllabus in 1959 for both Basic and non-Basic schools.

General features

'The Bihar State Textbook Publishing Corporation Ltd.' was established in Patna in 1966 for the publication of nationalised school textbooks. The education department decided to adapt Hindi language textbooks prepared by NCERT separately for classes I to VII. So the syllabus was revised to make room for the above-mentioned books. On the same pattern Urdu textbooks were also adapted on the basis of NCERT Hindi textbooks. At the same time the syllabus was so revised that new mathematics, new science books, history, geography and civics could be introduced in it.

The Indian Education Commission recommended 10 + 2 + 3 pattern of Education. Our State Government accepted it and so new curriculum was developed for this purpose. The new curriculum was introduced upto class VII by 1977. According to it the structure is also changed as follows :

Primary School	I–IV
Middle School	I- -VI or V to VI

Some high schools also have V and VI classes. Everywhere in the State the elementary classes have to follow the same curriculum. The curriculum includes the following :

Classes-I-IV—Mother tongue, Rashtra Bhasha for non-Hindi speaking children and Sanskrit for Hindi students, Mathematics, Social Studies, General Science, Physical Education, Drawing, Music and Work Experience (crafts)

Classes V-VI--Mother tongue, National Language (Hindi) for non-Hindi speaking students, Sanskrit for Hindi students, English, Mathematics, Science (Physics and Biology), History & Geography, Civics and Moral Instruction, Work Experience, Physical Education & Games, Music and Drawing.

Implementation

Decentralization of the curriculum is being tried out in Bihar to some extent. In 1975 school complex programme was started in the district of Nalanda.

The Nalanda district was divided into 11 areas. There is an area education officer from the Bihar Educational Service. The area has ten high schools, about 30 middle schools and 150 primary schools. The area education officer has the same powers and functions in this area as a sub-divisional education officer has in his sub-division. There is an assistant area education officer in the grade of deputy inspector of schools to assist the area education officer in the field of elementary education.

Three or four middle schools are tagged to a high school. Similarly four or five primary schools are tagged to a middle school. This arrangement makes a school complex. The headmaster of the High School is the head of the complex and is called 'Sankul Pradhan'. The headmaster of the Middle School is the head of the sub-complex and is called the 'Up-Sankul Pradhan'. These schools are situated very near to the office of new supervisors, so surprision visits have become easier for them. Naturally there is much improvement in regular attendance of teachers.

Headmasters of High Schools and Middle Schools meet at least once in a month under the presidentship of the area education officer. They discuss the problems which they face in the implementation of the curriculum. The area education officer and the 'Sankul Pradhan' give model lessons by which the teachers are benefited.

There is an Area Complex Committee. This committee consists of all headmasters of High Schools, four to five headmasters of Middle Schools and five educationists including one Harijan, one lady and one member of the minority community, with the area education officer as the president. The committee meets once in two months. Co-operation from the people is solicited by the committee and it helps the officers in implementing the educational programme in the area. This work is done by the District Complex Committee at the district level.

Re-orientation of teachers is also organised sometimes at area level and sometimes at district level. Sankul Pradhan, teachers of High Schools and headmasters of Middle Schools assist the officers in this task. S.I.E. also conducts such re-orientation and in-service training programmes in the state.

'Sankul Pradhan' and 'Up-Sankul Pradhan' manage the implementation of the curriculum in such a way that the resources, instructional materials, science apparatus etc. of an institution can be utilized in other schools of the complex or sub-complex as the case may be.

Education of scheduled castes and scheduled tribes

As regards the elementary education of scheduled castes, it is much below the mark. Although the state government allots scholarships and free textbooks to their children, we are far behind in this regard. Concerted efforts are also not possible because the population is scattered. This is equally true of the education of scheduled tribes.

The position of girls' education, on the whole, is more or less the same.

Teacher education

There are 85 Primary Teachers Education Colleges to impart training. A new syllabus has been introduced for this purpose in 1977 There are four such colleges where only intermediates having at least five years' teaching experience are admitted for one year. The course is for two years, but they get intensive teacher education for one year only. In other colleges, matriculates or persons having equivalent qualifications are admitted for two years for teacher education There is also a two-month teacher education course for teachers above the age of 45 years.

Book banks have been provided in some schools to facilitate the education of weaker sections of the society. Efforts are made no doubt for the qualitative and quantitative improvement but on the whole it can not be seid that all is well with the present State of elementary education in Bihar.

Curriculum Development at Secondary Stage in the State of Bihar

Dr. G. L Mandal

Background

Bihar and Orissa were separated from Bengal Presidency in the year 1912, and Bihar was separated from Orissa in 1936. Bihar has 6 Divisions and 31 Districts with a total population of 6 crores. Out of the total population 14 per cent belong to scheduled castes, 10 per cent to Scheduled Tribes and 58 percent to other backward communities. Hence Bihar is educationally not very advanced.

After independence we wanted to reconstruct our society and treated Secondary Education as one of the agencies for the same. A good number of new Secondary schools were opened by the well-to-do persons of the community and these schools were recognised by the Education Department. At present, Bihar has 3500 Secondary schools.

We not only increased the number of Secondary schools but at the same time we have been always very conscious of their qualitative improvement. The Government of India set up the Mudaliar Commission to examine Secondary Education and recommended improvement. The Commission recommended the diversification of courses beginning from the ninth class and introduced the system of higher secondary and multipurpose secondary schools. The system was abolished in the year 1972 with consequent confusion. In the meantime the Kothari Commission's Report had been out, and was being discussed.

Keeping in view the demands of the students and the recommendations of the Kothari Commission, the Government of Bihar decided (vide notification No. 4830 dated 23rd November, 1974) to introduce the 10+2+3 scheme. In pursuance of this decision the new curriculum was introduced in 1975 at the primary stage. Upto the year 1978 Bihar has been able to introduce the curriculum upto Class VIII. By the year 1980 classes IX and X would be covered and the students would take the first public examination under the new scheme in the year 1981.

Implementation

Bihar had to bring some changes in the existing structure of classes at the primary and secondary stage. We have been able so far to prepare teachers and textbooks etc. according to the needs of the students.

To implement the new curriculum in classes IX and X, Bihar has to prepare teachers and textbooks.

Problems and issues

There are 8 Teachers' Training Colleges in the State. Their main responsibility is to give pre-service training (B. Ed.). But due to the implementation of the new curriculum, they are also arranging in-service training courses. The S.I.E., the State Institute of Science, and Institute of English are also organising in-service training courses. We are contemplating to hold in-service training courses particularly for modern maths, work experience, etc. We have only one Physical Training College. To cope with the demands of the Secondary schools, another Physical Training College may be established.

As far as the question of preparing textbooks is concerned, Bihar has a Textbooks Publishing Corporation, and all nationalised textbooks are published through this Corporation. As soon as the curriculum for classes IX and X is finalised, textbook writers would be appointed by the Education Department. The books would be written by them and the Corporation would publish them. The books are distributed to the schools through the help of Teachers' Cooperative Societies and the wholesale dealers/retail dealers.

In Bihar the curriculum is finalised with the help of subject committees and S.I.E. In subject committees the subject specialists, educacationists, experienced headmasters and teachers and also university professors are invited. It is the Education Department which finalises the curriculum and the approval of the government is essential for its final acceptance.

Special features

The following institutions have been founded for smooth working of Secondary Education ;

1. Board of Secondary Education : Is is an autonomous body. It deals with the recognition of secondary schools, constitution of School Managing Committees and service conditions of teachers. It also extends help in the appointment of teachers. This has enabled the payment to teachers in time and the teachers have been freed from the clutches of Managing Committees.
2. Education Service Commission : It is an autonomous body. It deals with the appointment of teachers and headmasters of secondary schools. It is the duty of the Commission to advertise, to conduct interviews and to recommend the names for appointment to the Bihar

Board of Secondary Education. This has ensured fair selection and appointment of teachers.

3. Bihar School Examination Board : It is an autonomous body. Education upto secondary stage is free; hence the number of examinees is increasing. This year 2.25 lakhs of examinees have appeared in the Secondary School Examination.

(a) Examination Centres : The examinations conducted by the Examination Board are fair. Most of the examination centres are in the towns so that the centres can get every possible help if necessary from the magistracy and police. In every centre there is one permanent observer, and one magistrate with armed forces. Besides this, flying squads are appointed for three/four examination centres. The questions are supplied to the nearest bank or government offices to enable the Centre Supdt. to get the question papers daily in time.

(b) Evaluation Centres : Examining of answer-books are centralised. Examiners are appointed invariably from amongst the teachers. There is provision of only 8 co-examiners under one head-examiner from this year in place of 12 co-examiners. The examiner can examine only 30 answer-books in a day. This has been done to ensure justice in examining answer books.

The answer-books of a division are sent to the other divisions. Not only this, the answer-books of each subject of one examination centre are sent to various evaluation centres. The result is published in time. It is prepared with the help of the computing machine.

(c) Secondary Examination Result : There are some notable points in connection with the examination results. They are : (a) the students who pass in all subjects but fail only in English are declared 'Pass without English', (b) If one has failed in one of the elective subjects, but passed in the additional paper (10th paper) one can make a request that he be allowed to offer the additional paper in lieu of one of the elective subjects in which he has failed, to get through the examination. (c) If one has passed in English and has obtained proficiency marks (Maths 75% likewise in any other subject) but has failed in one subject, he is given weightage upto 10 marks in the failed subject to get through the examination. Thus a very rational approach has been taken in preparing secondary examination results.

Last year (1977) we had 46% result. The above rational approach has enabled many examinees to get through the Secondary Examination. This has checked the wastage of manpower as well.

4. School Complex : This system is introduced in three districts of Bihar. This is an example of decentralisation and has given self-respect to teachers.

Development Authority Board for the Development of Scheduled Tribes of Chhota-Nagpur Division and Santhal Paragana District: A number of secondary schools are run by missioneries. Chhota-Nagpur Division is full of minerals. Several heavy iron industries like TISCO, TIECO, HATIA, BOKARO are installed in Chhota-nagpur Division. They are also running secondary schools in a good number. The establishment of D.A.B. for Chhota-Nagpur and Santhal Paragana would give a push in the expansion of Secondary Education among the scheduled tribes.

Netarhat Residential School : It is a residential school run by the Government of Bihar. It is an ideal institution located on the hill in the district of Palamu under Chhota-Nagpur Division.

Curriculum Development in the State of Gujarat

V.K. Dhotre

Background

Curriculum development must be seen as an integral and continuous part of educational policy and planning.

In view of the present expansion of education, the revision of aims and objectives of education and the varying needs of pupils at the primary as well as secondary level, it became necessary to revise and reconstruct the school curricula in Gujarat State in 1966. So the "scheme for the reconstruction of the total school curriculum in the state of Gujarat" was prepared by the Syllabus Reconstruction Committee. Guiding principles of education and general and specific objectives of Primary & Secondary Education were specified.

Pattern of education

At present Primary Education stage is of seven years. The Secondary Education is spread over five years: (a) Secondary Education (3 years) (b) Higher Secondary Education (2 years).

Some highlights of the syllabus

Promotional agencies

After deciding upon the pattern of education subject-wise committees were appointed for preparing syllabus for different subjects for elementary and secondary stages. In Syllabus Committees there was due representation of subject-experts, curriculum specialists, teacher-educators and teachers. The syllabus prepared was discussed with a group of teachers and their suggestions were incorporated.

Specialities of the syllabus

The Science syllabi for standards I to VII were specified in terms of concepts, principles and phenomena. Activities to be performed by the students and teachers were enlisted gradewise. In standards I to IV it is Environmental Science. In standards V to VII the syllabus of Science has been divided into three disciplines : (a) Biology (b) Physics (c) Chemistry. A few elements of open syllabus were introduced in Social Studies at the elementary stage, e.g. your village, district, local saints, local leaders, etc. Teaching approach to certain subjects like grammar and languages was described in detail.

Objectives

The curriculum has been developed so as to achieve the educational goals and general objectives as mentioned below in terms of behavioural changes :

1. Individual growth
    - (i) Physical development
    - (ii) Emotional development
    - (iii) Intellectual development
    - (iv) Moral development
    - (v) Training of the hand.
2. Vocational skills
3. Social skills.

The curriculum is need-based, life-related, child-centered and environment-oriented.

Implementation

Curriculum development programme has been implemented effectively in the State through the Curriculum Cell in the SIE. This Cell was established in 1972. The Cell has brought out curriculum guides, source books in Social Studies, workbooks in Languages, and prepared teaching kits for Mathematics and Languages. It has also brought out teaching-aid manuals with a view to encouraging teachers for preparing improvised teaching-aids.

Orientation courses

The revised syllabus was upgraded. Subjects like Mathematics and Science were totally recast. So in-service programmes were organised. The selected key personnel were first trained who in turn trained the rest of the teachers. The training programmes were so organised that almost all teachers were trained before introducing the syllabus.

Teachers' handbooks

In order to help teachers to develop teaching units for class-room teaching, teachers' handbooks were prepared for all subjects for all standards under the following heads :

- (i) Units of the content
- (ii) Objectives of each unit

(iii) Learning experiences
  (a) Teachers' activities
  (b) Students' activities inside and outside the classroom.
(iv) Teaching-learning material
(v) Evaluation.

Instructional material for students

The production of textbooks has been nationalised. In subjects like Science and Mathematics a few textbooks were tried out in 30 schools before introducing them on a large scale and they were modified as a result of the try-out. Textbooks are evaluated at regular intervals and, where needed, corrected versions are published generally at the end of three years. The nationalised textbooks have become popular because of their quality.

Curriculum renewal project

With a view to making education more useful and meaningful to the people of the rural area, Curriculum Renewal Project has been taken up by the SIE with the financial aid of UNICEF. Curriculum has been developed on the basis of the felt needs, and instructional materials have been prepared keeping in view the nature of the local environment. Books, workbooks, project charts, etc. for Environmental Studies have been prepared.

Developmental activities in community education project

Through this project, it has been decided to arrange a system which may bring in co-ordination of development agencies working for that area.

Non-formal education

With a view to educating the youth in the age-group 15-25 years who have never gone to school or who have left studies half-way, a non-formal education project has been taken up. In this regard, the following booklets were prepared in six areas directly related to their life.

1. Our health
2. Better home and family life
3. Our country and civic life
4. Our agriculture
5. Development of human values
6. Vocational improvement.

This material mainly consists of visuals alongwith few explanatory sentences for neo-literates. Literacy and numeracy lessons are included as an in-built system of each lesson in above mentioned areas.

Teach english series of radio lessons

In Gujarat State English was taught as second language from standard VIII. Recently it has been decided to introduce English from standard VI on optional basis. Six weeks' training courses were organised for primary teachers with the help of Secondary Teachers Training Colleges. Also a series of radio lessons has been arranged for teachers. Support material for each lesson has been prepared and supplied to teachers in the form of a special issue of 'Jeevan Shikshan'.

Problems and issues

The syllabus has been upgraded to such an extent particularly in the subjects of Mathematics and Science that teachers as well as students find it heavy and difficult to implement. Needs of tomorrow and rural development are not adequately reflected in the curriculum.

Evaluation Practices in the State of Gujarat—A Case Study

Dr. (Km.) M. C. Bhatt

Continuous evaluation of the all-round development of children

Curriculum is a wider term that includes all the programmes connected with the teaching-learning aspects in the school. The all-sided development of children requires that all the programmes should be implemented in such a way as to help the child to attain full and all-sided development.

Evaluation is an in-built process necessary for the successful implementation of the curriculum. The planned curriculum cannot be implemented unless the programmes have been evaluated at every step and remedial programmes have been given. Therefore, a continuous evaluation programme was undertaken.

The revised syllabus based on the curriculum came into existence in the early seventies and thus it was in the early seventies that SIE, Gujarat undertook a continuous evaluation of the all-sided development of children. Guidance and remedial teaching were inter-woven aspects of the programme. The programme has been undertaken in standards V, VI and VII.

Special features

The following five aspects of child development have been considered for evaluation : (a) physical development, (b) intellectual development, (c) personal and social qualities, (d) development of attitudes and personality traits through co-curricular activities.

The programme has been undertaken by SIE, Gujarat since 1974. It was started in 36 primary schools of Baroda District and this year it has been extended to all the primary schools of Gandevi Taluka, Valsad District and to the 50 primary schools of the Extension Services Centre in Ahmedabad District.

1. *Physical development*
   - (a) The aspects taken into consideration are :
     - (i) height, (ii) weight, (iii) height/weight ratio, (iv) audio-visual defects and (v) others.
   - (b) Techniques of assessment ; (i) observation by teachers, (ii) medi-

cal check-up

(c) Tools of assessment : (i) measurement by teachers (ii) rating scales

(d) Periodicity Twice a year : one per term.

2. *Intellectual development* (Scholastic Aspects)

(a) Aspects included are : (i) written tests, (ii) reading skills, (iii) handwriting skills, (iv) oral expressioe, (v) map reading, chart and table reading, (vi) practical examination in science.
Written tests are there for all the academic subjects.

(b) Techniques of assessment include : (i) written examination, (ii) oral examination, (iii) practical examination.

(c) Tools of assessment are in the form of : question papers drawn by classroom teachers teaching the subjects.

(d) Periodicity and nature of assessment

(i) Periodical fortnightly tests in each subject are conducted by the teachers in the first term. Question-papers are of 25 marks and one-hour duration.

(ii) Terminal examinations at the end of the first term are of two-hours' duration having 50 marks.

(iii) There are also periodical fortnightly tests for the academic subjects during the second term. Question papers are of 25 marks each and of one-hour duration.

(iv) Annual tests consisting of 100 marks per subject and of 3-hours' duration are conducted at the end of the year.

All the scholastic aspects of development are evaluated through teacher-made tests. No intelligence, aptitude or diagnostic tests are used due to the lack of financial provision.

Fortnightly tests are usually conducted on Saturdays. With a view to avoiding continuous tension of examination, the subjects to be tested are announced the previous afternoon. The assessed answer-books are to be returned on the following Monday or Tuesday. The question-papers and the answers written by the pupils are discussed to provide pupils the necessary feed-back.

3. *Personal and social qualities*

(a) The aspects included are : (i) discipline, (ii) regularity, (iii) punctuality, (iv) habits of cleanliness, (v) emotional stability.

(b) The technique of assessment is observation.

(c) The tools of assessment are five-point rating scales.

(d) Periodicity is twice a year, once per term.

4. *Attitudes*

(a) The aspects included are : (i) attitude towards learning, (ii) attitude towards teachers, (iii) attitude towards schools, (iv) attitude towards school property, (v) attitude towards fellow students.

(b) The technique of assessment is observation.

(c) The tools of assessment are five-point rating scales.

(d) Periodicity is twice a year, once per term.

5. *Personality reflected through co-curricular activities*

(a) The personality traits included are (i) sense of responsibility (ii) initiative, (iii) industriousness, (iv) co-operativeness, (v) spirit of social service (vi) civic consciousness, (vii) leadership qualities.

(b) The technique of assessment is observation.

(c) The tools of assessment are five-point rating scales.

(d) Periodicity is twice a year, once per term.

Promotion to the next grade to be given on the basis of children's performance generally on all the previously mentioned five areas and particularly on area no.2 - intellectual development. Children have to work continuously throughout the year and there is hardly any chance success or chance failure.

The Primary Education Act and rules do not allow the abolition of promotion examination and therefore promotion-examination has not been done away with in this experiment. Hence there is no fear of standards of education being lowered.

Moreover, there is an in-built system of continuous guidance through a continuous assessment of children. Each fortnightly test is an evaluation and provides the base for guidance that helps children in their next performance.

Lastly, at the end of the academic year all the children are not promoted automatically to the next grade; the weak students are expected to work during vacation. They are assessed in the beginning of the next academic year and, if found suitable, go to the next upper standard. The important aspect of the programme is the involvement of teachers at every step.

Better results can be achieved if refined standardized assessment tools can be made use of. At every point of assessment teachers are expected to record the observations and assessment in the forms devised specially for this purpose. These records are very useful for another programme undertaken by SIE, viz., "Guidance Services for the Primary Schools".

Changes in the School Curriculum at the Primary Stage (Classes I to IV) in the State of Haryana

Yoginder Kumar

Background

The state of Haryana came into being on 1st November, 1966. At that time schools were few and the area was economically backward. The educational structure was :

1. Primary classes I to V
2. Middle classes VI to VIII
3. High/Higher Secondary Schools with classes IX to X or IX to XI.
4. Four years of College or three years of College for students passing High/Higher Secondary stage. At that time the curriculum in vogue was that adopted in the joint state of Punjab. After reorganisation, the Government opened new schools and the existing ones were upgraded so that education was brought nearer to the students. As the state launched developmental programmes it was felt that the existing curriculum was subject-based information-oriented, obsolete, inadequate and out-dated to meet the needs of developing society. The prevailing poor standards warranted qualitative improvement in education. The Education Commission (1964-66) had also stressed the need to raise, upgrade and improve the school curriculum, so as to make it in tune with the life of the people.

Keeping all these factors in view it was decided to adopt the curriculum formulated by N.C.E.R.T. with minor changes here and there keeping in view the needs of the State.

Objectives

The objectives of the new curriculum were :

1. to develop love of truth and moral values;
2. to help the child to develop his personality and to enable him to understand his environment that was changing at a rapid rate;
3. to help each child to use in his daily life the skills of reading, writing, arithmetic, and to seek information and express himself

creatively and artistically:

4. to develop in the child the qualities of good citizenship and to imbue in him patriotic fervour, helping him to take his full share in the life of the home, the neighbourhood, the state and the country; and
5. to help the child to acquire a scientific outlook and an elementary understanding of the processes of nature.

Special features

1. In the old curriculum there was a provision to teach two languages, viz., mother tongue from class I and second language from class III. The new syllabus provided for only one language i.e. mother tongue (Hindi).
2. With regard to mathematics, it was decided not to follow the N.C.E.R.T pattern So modern mathematics was not introduced and the old one was retained.
3. The contents in General Science were enriched and emphasis was laid on learning through doing.
4. In Social Sciences, the syllabus for classes I and II was left open with only broad outlines such as our home, our family, our school, our neighbourhood and our needs. In classes III to V it was brought on par with the N.C.E.R.T. syllabus.
5. A new subject, namely, Recreational Activities was introduced. This new subject included areas of drawing and painting, music and drama, clay-modelling, sanitation and physical education.

Implementation

Mere revision of curriculum is of no avail if it is not implemented well. Hence the following steps were taken so that the objectives of qualitative improvement could be achieved.

1. As the content was enriched, the classroom teachers needed orientation for effective teaching. Therefore the following measures have been adopted :
   - (a) In-service training courses for primary teachers have been organised every year since 1973. Every year 5 to 6 thousand teachers are trained. The duration of the courses is three weeks. Training is imparted at one hundred centres located all over the state. Resource personnel for these centres are trained beforehand at S.I.E. every year. These courses are organised during the summer vacation. Every primary teacher of the state has been covered under the scheme till 1977. This year the circle is being repeated.
   - (b) It was realised by the authorities that in-service training

should be a continuing feature so as to increase professional efficiency. A system of school complexes was evolved in 1974. Under this system about 900 centres for further in-service training of teachers were established in High Higher Secondary Junior Basic Training Schools. Every centre caters to the need of teachers teaching in an area within 8 kms. of the centre. About 30 to 45 teachers attend the centre once a month on a Saturday. The problems of the teachers are solved and guidance is given to them.

(c) A monthly magazine, namely . 'Prathmik Adhyapak' is published by S.I.E. and distributed freely to all primary teachers. This is a sort of service training through correspondence.

(d) Special training in teaching of science was imparted. Science kits were also provided.

(e) In 1977 A I.R. Rohtak with the collaboration of the Department started programmes for teachers on every Saturday.

2. With the exception of mathematics, books published by N.C.E.R.T. were adopted after making necessary changes. Teacher-guides and workbooks were prepared and supplied to the teachers.
3. Teachers were imparted training in the preparation of instructional materials.
4. The curricula were implemented in a phased manner i.e., I to III classes in 1972, IV class in 1973 and V class in 1974.
5. The curriculum being closely associated with the mode of evaluation, evaluation techniques had to be modified.

   (a) New type of question-papers containing objective based and mostly short-answer type test items to cover the entire syllabus were introduced. Teachers were given training in framing such test-items involving the assessment of knowledge, understanding, skill and application.

   (b) It was further decided that there should be no detention in classes I and II provided a student has attended the school for 75% of the working days.

   (c) In class V annual examination is held at the level of the school complex. This helps in maintaining the standards. Hindi, Mathematics, General Science and Social Studies are the examination subjects. Due importance is given to oral examination.

6. Medium of instruction is Hindi i.e., the mother tongue.
7. Textbooks are nationalised and are prepared with the active collaboration of S.I.E.
8. Teachers manning single-teacher schools were given training in multiple class teaching.

9. Every school has to do institutional planning and submit the plan to the higher authorities.

Problems and issues

1. At present the task of developing curriculum is mainly concentrated in the hands of specialists. The initiative and confidence of the teacher in the classroom is to be sought for his creative involvement. His presence and importance can no longer be ignored.
2. Education has to be meaningful and it should cater to the needs of rural life and agricultural advancement. Whatever new ideas may be woven, the provision of good education to underfed children through schools accommodated in poor buildings and huts devoid of equipment and materials is a challenge If this is not done curriculum planning would be a superfluous luxury.
3. In view of the recommendations of Ishwar Bhai Patel Committee the government has recently appointed a high-powered committee which has to undertake the task of reviewing the present curriculum. The committee has been asked to suggest modifications in the present curricula.
4. One question that has been agitating the minds of educationists is 'should there be no detention upto class VIII' ? Those in favour of this view argue that no detention will bring down to a large extent the present wastage and stagnation and will also help us in attaining the goal of providing compulsory education in the age group 9-14 which is envisaged in our Constitution.
5. Heavy content-load, rigid time-table, and long working-hours are other issues which need to be tackled.

Impact

As a result of these modifications the standards have definitely improved as far as subject contents is concerned. The children are now better equipped for the secondary stage. The teachers manifest keen interest and alertness and keep themselves up-to-date. The number of drop-outs have decreased in classes I and II but one problem persists. There should be no hesitation in stating that the teachers have not so far been able to accept the policy of no detention in classes I and II. The foregoing assessment is not final and a definite picture will emerge only after some more time.

Curriculum Development for Elementary Schools in the State of Karnataka

S. R. Mylaraiah

Background

In the State of Karnataka the latest revision of the Primary School curriculum came into effect from the academic year 1974-75. In pursuance of the major recommendations of the Kothari Commission the then Mysore Government introduced the General Education programme from 1st standard to 10th standard, of which 1st standard to 7th standard forms the Primary stage and 8th standard to 10th standard the Secondary stage.

In order to link the Primary School curriculum to the requirements of the Secondary School curriculum and to make education more meaningful and continuous and to implement some of the major recommendations of the Education Commission, the Primary School curriculum was revised. Accordingly a General Curriculum Committee was set up in 1969 by the Government. Seventeen sub-committees were also formed to prepare the syllabus for different subjects. Before the finalisation of the syllabus and textbooks, this was tried out on an experimental basis in several educational institutions. Besides, opinions were also called for from teachers, inspecting authorities and headmasters. This revised curriculum was finally approved at the meeting of the General Curriculum Committee held in February 1971, and came into force from the academic year 1974-75.

Objectives

Some of the major objectives of the revision of syllabus are the following :

1. To make Primary Education more meaningful, effective, and integrated.
2. To include subjects like —Work-experience; Moral Education, Health Education etc.
3. To lay more emphasis on Physical Education.
4. To make school education more interesting and effective and to

National Institute of Education
[illegible]

minimise drop-outs as far as possible.

Special features of the revised syllabus

1. Provision is made for pupils who do not study Kannada as their mother tongue or as regional language under the three language formula, to study Kannada as a special subject.
2. Health Education is included in the syllabus under General Science.
3. Basic concepts relating to population education have been incorporated in the syllabus for Social Studies.
4. Seventeen important activities have been included under Work experience.
5. Moral Education is made compulsory
6. Scientific importance is given to physical education.

Evaluation procedure

There are no detentions in standards I and II, but there is scope for remedial teaching for below-average students. This remedial teaching is to be carried out during the first six weeks from the 3rd week of May which is the commencement of the academic year.

From the III standard to the VI standard (both inclusive) there is to be grading system by the teacher on a 5-point scale.

There are to be four tests, two in each term, one mid-session examination and one annual examination. The weightage to tests and examination is to be 50 : 50.

At the VII standard the candidate has to face a District Level Examination and has to score 35% marks in each subject in order to get promotion.

Problems and issues

It is but natural that whenever a reform is introduced or a change takes place, several problems arise. One of the important problems is competency of the teachers to handle the different subjects under the revised syllabus. To overcome this, teacher guide-books in different subjects are supplied and also many orientation programmes of varying duration are conducted. Teachers are also trained in handling Science kits supplied to many schools.

Innovative practices

Several innovative practices are taking places in the state of Karnataka at the Primary School level for the qualitative improvement of education. A few are mentioned below :

1. The Social Studies textbook has two parts, the first part is common to all the districts of the state. The second part is different for

each district which deals with the social, historical and geographical set-up of that particular district.

2. In several taluks, Asstt. Educational Officers have collected funds, furniture, equipment, etc. from the public for the setting up of schools in the areas. In one taluk materials worth rupees seven lakhs and in another 'taluk' worth rupees four lakhs were collected in the form of furniture, equipment, etc. during the last year. It has been taken up by educational administrators and teachers as a movement and it is heartening to note that the public are responding in a very generous and encouraging way.

Impact

Children do not face now as many problems as before when they come to secondary schools. They understand different subjects and topics that are taught at the secondary stage. The wide gap between secondary school syllabus and the primary school syllabus has been bridged.

It is also felt that student participation in different activities of the school is quite encouraging.

Why, When and How of Secondary School Curriculum in Karnataka State

C. G. V. Setty

The Karnataka State, an integral part of this great, fast-developing country, is fully aware of its responsibilities towards its future citizens. It is taking timely action to meet the challenges as and when they arise. The curriculum has undergone changes and modifications many a time to meet the new requirements.

Earlier revision

In pursuance of the major recommendations of the Kothari Education Commission of 1964-66, the then Mysore government promptly introduced the General Education Programme for the standards 1 to 10, the educational ladder being 4+3+3+2+3. The then existing secondary school syllabus with electives was revised and a new electiveless syllabus was introduced from the year 1969-70 onwards in a phased manner. The state government constituted various subject-committees to prepare and finalise the syllabi for all the standards in all the subject areas. Eminent educationists, professors in the subject areas and class-room teachers were involved in this task This syllabus specially in core subjects struck a middle-of-the road policy. Some modern topics specially in mathematics and science such as a few elements of modern mathematics, nuclear physics, were included

Recent revision

As has already been mentioned, the fast occurring changes not only in the field of science and technology but also in the field of politics—both at national and international levels—have necessitated a further revision of the syllabus. The primary school syllabus was revised and was finally approved at the meeting of the General Curriculum Committee held in February 1971 Text-books based on this new syllabus were prepared by expert committees consisting of experienced and eminent teachers in all the subject areas for all the standards.

By the end of 1977-78 the introduction of the new primary school curriculum was completed. As the content of the syllabi of the primary classes was enriched and updated, the existing secondary school syllabi required not only enrichment but also restructuring and modification so that the gaps in the courses of studies be bridged.

Thus the revision of secondary school curriculum was taken up with the following two main objectives :

(i) to enrich the content to update it and make it a continuous programme of studies.

(ii) to make the educational standards of the state on par with the national level as contemplated under 10+2+3 pattern of education.

To achieve these objectives the government of Karnataka set up a co-ordination committee consisting of eminent educationists, university professors, teacher educators and practising teachers. The main job of the committee was to chalk out the general principles and broad outlines for the revision of the syllabi. In addition, eleven subject-committees were also constituted to prepare the syllabi in different disciplines. These expert committees prepared the syllabi under the guidance of a chairman who was also a member of the co-ordination committee. The draft syllabi were placed before subject inspectors and class-room teachers for comments. Their suggestions were carefully examined by the co-ordination committee which gave a final shape to the draft. In addition to bringing about certain changes in the content, etc. the scheme of examinations was also revised This comes into effect from the year 1978-79.

Some special features of the present syllabus

1. It is in tune with the 10+2+3 pattern contemplated at the national level.
2. Sanskrit is introduced as a third language in lieu of Hindi.
3. Provision has been made for the study of Kannada, the regional and official language, as a third language for those whose mother tongue is not Kannada The scheme of language study has been so framed that every pupil will study Kannada for atleast 3 periods a week.
4. The thematic and idea content in language text-books have been specially stated so that the national goals of secularism, democracy and national integration are highlighted and emphasised.
5 Development of values of life and attitudes constitute an integral element of the syllabus and is spread over the school course and is so phased that the essential features are covered in a three-year course.
6. A suitable programme of activities that ensure the development of social and civic competencies have been included in the content

of the social sciences - history, geography and civics. In each of these subjects are included project work or practical activities to be done, either in the classroom or outside the school or in the library.

7. Physical and economic geography has been adequately dealt with.
8. Current topics like our forest wealth, preservation of trees, wild life, population education have been included in the social studies syllabus.
9. Health education forms a part of science syllabus.
10. Practical work in Science subject has been given sufficient importance.

Scheme of examination

There will be in all eleven papers to be answered by a pupil at the time of examination for a total duration of 25½ hours, total marks allotted being 600. The present practice of setting a "New Type Test" paper will be discontinued. On the other hand, questions which warrant the pupils to write a word or a phrase or a sentence as answer are to be set and these can be answered in the answer-book itself.

Candidates obtaining 35% of the maximum marks separately in each subject except the third language shall be declared to have passed. And a candidate who gets not less than 25% marks in the III language and not less than 30% in each of the remaining subjects and 35% in aggregate shall also be declared to have passed.

Candidates failing in any subject may appear in that subject in subsequent examinations (subject to a maximum of 3 attempts).

Some bottlenecks

It is usual that changes are met with protest. The introduction of the present syllabi is no exception to this. Teachers are raising their voice against this, saying that this is of very high standard. Recently the Karnataka State Secondary Schools Headmasters' Association conducted a two-day seminar to discuss this syllabus and passed a resolution requesting the government to review it and to dilute it to some extent. But a casual survey reveals that it is only teachers who are against this but not the pupils. It is true, though many people do not agree with this, that pupils are capable of rising to the occasion provided arrangements are made to deliver the goods in a proper way. There is some justification in the argument of the teachers too. A number of topics which have found a place in science & mathematics syllabi are of latest origin. Most of the teachers have not studied them at the time of their graduation. Hence there is a dire need for arranging suitable intensive and extensive orientation courses in almost all the disciplines for all the teachers.

It is also essential that schools have to be equipped with good laboratories for conducting science classes properly. No doubt it is a stupendous task. The State government is taking all possible steps in these directions, in orienting teachers and equipping the schools.

Concluding remarks

It is heartening to note that the general public, especially the educated class, takes enough interest in the affairs of education. Parents, many a time, offer suggestions and comments on the content of the syllabus and particularly text-books. One can see this in articles and letters to the editor in the newspapers too.

But the educational policies of different political parties do cause some confusion at times. The debate that is going on regarding 10 + 2 + 3 pattern is an example which substantiates the above statement.

It would be better if educational policies and patterns are determined by a body of real experts in the field of education who are free from political bias Such an autonomous body should take all factors into consideration such as our needs, potentialities, resources and evolve an outline of a flexible national curriculum. The states may then prepare their own on its basis making suitable adjustments to meet the local needs. This will certainly help national integration. Let us hope that such a mechanism will come into being very soon.

Curriculum Development in Kerala State

T. P. Chandrasekhara Kartha

Background

Kerala, the land of coconuts and back-waters is well-known for its high percentage of literacy. About 9000 lower primary schools, 3000 upper primary schools and 1400 high schools cater to the educational needs of the school-going population. Hence a child need not walk more than two kilometers to attend a primary school except in very hilly areas. There is a high school in every Panchayat of Kerala. Naturally the school enrolment is very high. But unfortunately, we fail to keep a lot of them in the school; hence the drop-outs are many.

Pattern of education

Even from 1961 Kerala is following the 10+2+3 pattern. But the plus two stage is attached to the universities and the ten-year schooling is looked after by the Department of Education. The first four classes constitute the primary and almost all the primary schools are independent of high schools. Standards V to VII form the Upper Primary section which is either attached to the lower primary section to form Upper Primary Schools or to high schools. Classes VIII to X form the high school stage.

Course of studies

Malayalam is the medium of instruction throughout the school stage except in certain English-medium schools. In bilingual areas the medium of instruction is also the minority language of that locality. The first language is the mother tongue i.e., Malayalam in the case of most of the schools. There is provision to offer Sanskrit or French as a part of the first language. English is taught as a second language from class IV and Hindi is taught from class V as compulsory subjects

Mathematics, containing elements of new mathematics, is taught as a compulsory subject throughout the school stage. Integrated General Science is taught till class V and Science is taught as separate discipline from standard VI. Integrated approach is followed in teaching Social

Studies. Physical education and Art are taught in all schools and Music is taught in some of the schools. It may be noted that there is only one common stream of school education in Kerala.

Curriculum revision

Curriculum revision was thought of as early as 1969. The then existing curriculum was criticised to be outdated and inadequate to meet the changing needs of the society. The teachers gave great weightage to rote memorisation. Hence all agencies connected with education supported the view of revising the curriculum. The objectives of revising the school curricula are as follows :

(i) to equip the child with the necessary knowledge, understanding, skills and attitudes to function effectively in a changing society.
(ii) to equip the child with necessary competence to contribute his share for the development of the society and the country at large.
(iii) to make the child an effective functional member of his home, and
(iv) to develop in the child aesthetic sense and the power to appreciate excellence.

Implementation

Drastic changes were needed in the subject areas of Science and Mathematics. Hence the model primary syllabi prepared by the NCERT in Mathematics and Science were taken as the basis They were translated into Malayalam with certain changes and discussed in detail in three regional seminars of selected teachers, education extension officers, assistant education officers, teacher educators, etc. The recommendations were pooled and considered by the Syllabus Finalisation Committees for the respective subject areas Experts from NCERT also helped in the finalisation of the curriculum. Committees for other subject areas also worked out the revised curriculum in their respective areas.

Textbooks and teacher-guides were prepared in the workshops. The curriculum for Science was tried out in 48 lower primary schools and 30 upper primary schools in three districts of the State. The feed-back from these schools was helpful in the preparation of the final textbooks and teacher-guides.

The curriculum for High School stage was revised by separate committees afterwards. But it was not tried out in any of the subject areas.

The curriculum for classes I to V was introduced simultaneously in 1971-72. The new curriculum for class VI and class VIII was introduced next year and so on. The first batch of students who had the new curriculum took the SSLC Examination in 1976.

The State Institute of Education was primarily responsible for all steps in curriculum revision. When the curriculum for High School classes was introduced, there was strong opposition from teachers and a section of the public. In the light of this, government have appointed a committee to review and revise periodically the curricula for various stages of school education. Several subject committees are involved in this also. Certain changes were suggested and the curriculum materials were revised accordingly. But the structure and approach of the curriculum remain almost unchanged.

Problems and issues

Teacher preparation is vital for the success of any curriculum change. The following steps have been taken in this direction :

1. *Preparation of curriculum materials*

Teacher-guides are available in all subject areas for all classes. These guides were prepared in workshops of teachers. Instructional materials in the form of reference books for teachers are also available in Science and Mathematics.

2. *Orientation of Headmasters and teachers*

Almost all the headmasters of High and Upper primary schools have been oriented towards the new curriculum. The orientation of lower primary school headmasters is being conducted. As class-teacher system is followed in lower primary classes, all teachers have to be oriented in all subjects. This is a huge task. Twenty-six training schools were converted into key centres for giving in-service training to primary teachers and this programme of in-service education continued for 3 years. By the end of 1977-78 about 75% of the lower primary school teachers have been oriented atleast in one of the two subject areas, namely, Mathematics and Science.

3. *In-service Education through correspondence*

Correspondence courses were run to enhance the professional competence of teachers of classes V, VI and VII. This mass-media approach consists of three inputs as far as science is concerned, namely, learning packets, radio lessons and activities or experiments done in the contact programme. About 2000 teachers are oriented every year in each of the subjects—Malayalam, Mathematics and Science.

4. *Publication*

Apart from the publication of curriculum materials, the Institute of Primary Education publishes a bi-monthly 'IPE Journal' which is used as a form for discussing problems of primary education. 'Vidyapeedham' is another monthly published by the Directorate of Education which disseminates well-tested educational practices and views of teachers etc.

5. *Teaching equipment- Science materials*

About 1000 primary science kits and 1100 sets of science kits for upper primary classes are supplied by the UNICEF. The department had selected 28 essential items for teaching science at the primary level, and about 2200 lower primary schools were supplied with these articles. In the same way a kit was designed for Uttar Pradesh classes and 1300 Uttar Pradesh Schools were given this kit at a subsidised rate. A survey of science materials, mainly chemicals, needed in the high schools of the State was conducted and these were bought in bulk and supplied to the needy high schools on a no profit no loss basis.

Vocationalisation of education

As a legacy of basic education, almost all the primary schools have sanitation, gardening and programmes of health and cleanliness. In some of the primary schools, skills in handling basic tools are imparted to the children. In 92 selected upper primary schools, training is imparted in certain trades. Here expert teachers are appointed.

The diversified courses in High Schools have been abolished. In selected high schools training in carpentry, smithy, electrical repairs, home science etc., are given to the pupils.

One good feature in this area is the observation of social service week in the first week of October every year in all the schools of the State when the student community alongwith their teachers do useful productive work on a large scale

Evaluation

Classes I and II are grouped together as an ungraded unit and hence there is no detention in class I. Teaching should be designed in such a way that all pupils acquire a minimum standard at the end of class II. In all other primary classes detention is restricted to 10%. In high school classes detention is restricted to 20%.

After the introduction of objective-based teaching, unit tests at the end of every teaching unit are given. Terminal examinations are also conducted 50% weightage is given to unit tests and terminal examinations and the other 50% to annual examinations in deciding promotions.

In the SSLC examination, group system was introduced from last year. The languages form one group and the core subjects form the other group. Instead of subject-minimum, group-minimum is prescribed for a pass.

Impact

Though the teacher inertia was great at the beginning, the system of in-service courses organised at various levels are having their slow effects and the teachers and the public have accommodated the curriculum which is testified by pupil achievement and teacher attitudes.

No systematic evaluation of the curriculum has been attempted yet.

Special features

1. The organisation of Junior Science Clubs in upper primary schools and upper primary section of high schools and Science Corners in lower primary schools went a long way to build up pupil pressure on the teacher to adopt activity methods in teaching science.
2. The voluntary in-service courses organised by academic councils and teacher organisations helped to change the attitude of teachers.
3. School complex programmes are not successfully carried out in most of the areas, though good work is being done in isolated centres. The tendency is toward organising academic councils at the sub-district level and at the district level.

Curriculum Improvement Programme in Madhya Pradesh at Primary & Secondary School Levels

R. S. Chauhan

Background

Old curriculum and textbooks in M.P. were not up to the mark viewed form the future needs of the community and the country. Keeping the NCERT syllabus and textbooks in view, a committee was formed to change the curriculum.

Objectives

1. To develop those basic skills, knowledge and personality traits needed in various occupations. This means skills in reading, writing, computation, knowledge of physical, biological and social world; and formation of attitudes, motivations and values which are conducive to good work performance.
2. To formulate practical problems and to seek and apply knowledge for their solution. Learning only what is in the syllabus and memorizing answers to anticipated examination questions are disfunctional and counter-productive.

In order to achieve the above two broad tasks the curriculum was changed both at primary and secondary levels in M.P.

Reorientation of teachers

Although the curriculum was changed at primary and secondary levels in all subjects the science and mathematics syllabi needed special attention. So reorientation programmes for training the teachers were organised.

Preparation of new textbooks

Books with the changed content of instruction and new methods were written for students and teachers respectively. The books were written by subject experts, edited by senior and experienced persons, and then published by the Madhya Pradesh Textbook Corporation. These books were introduced in a phased manner.

The main feature of the new method of instruction was that more emphasis was given on activity-based teaching rather than memorising facts. Teacher-guides were also published for both primary and secondary school teachers and were distributed free of cost to all schools by the directorate.

Orientation of Guardians

Another special feature of the programme was that four or five lecture programmes (in a month) on holidays were arranged for the guardians on the new content of instruction specially in mathematics. This programme was highly appreciated by the community.

School complex and shala vikas samiti

School complex and school improvement committees are there to solve the difficulties faced by schools.

Examinations

Objective-type and short-answer type questions cover the whole content and there is no choice for a student. Question-paper setters are trained through workshops for new methods of evaluation by S.I.E. Extension Department.

Medium of instruction

From class I to V medium of instruction is the mother tongue. In most of the parts of M.P. it is Hindi but we have Urdu, Sindhi, Marathi, Oriya, Bengali, and English also as media of instruction. From class VI to VIII we have three languages. English starts from class VI.

Non-formal education

For children who have not gone to school or who are drop-outs, there is non-formal education system for the age group 6-14, so that they may join the formal system after passing V standard or VIII standard examinations.

Work-experience and crafts

We have gardening, agriculture, toy making etc. both at primary and secondary levels to develop proper attitude towards work. Work-experience is still at the initial stage.

Kishore Bharati (at Bankheri in Hoshangabad Dist.)

This institution is developing an entirely new method of instruction. The teachers teach the child at the time when, or at a place where the child feels the need of knowing something about a particular thing or phenomenon by discovery method in the rural setting with indigenous materials.

Evaluation

Although a study regarding impact and systematic evaluation of the new programme is still awaited, the following evaluations were done :

(a) Evaluation of textbooks in Social Studies and Hindi.

(b) Evaluation of primary and secondary school teachers performance for the new content and methods of instruction given to them during the training.

Problems and issues

1. Low pay-scales of teachers, slow rate of future promotions and low social status of teachers do not motivate them properly for accepting new changes in the curriculum.
2. There is no extra motivation for the teachers working in rural and tribal areas.
3. Difficulties are faced by some teachers in teaching New Mathematics and increased science content even after training.
4. Publishing the texbooks in minority languages has proved very costly for the M. P. Text Books Corporation.

Science Teaching Development Programme in Madhya Pradesh

H. M. Rahman

Background

Ten years ago science teaching in M.P. particularly at the primary level was of very elementary nature. The content was poor and the text-books contained superficial knowledge of scientific facts. These books were prepared by commercial agencies and were sold in the open market. Majority of teachers working in primary and upper primary schools were unable to teach even this to their students. These teachers neither had studied science subjects in their school life nor in their training period.

First phase of development

In 1958 the old pattern changed from high school to higher secondary school and the science syllabus was also revised and the subject of biology was introduced. General Science was compulsory for all students. Meanwhile a post of Science consultant to the D.P.I. was created and through this office some stimulus was given to science education. Teachers of many schools were oriented in new trends and practices. Lists of requirements in different subjects were prepared and the apparatus was purchased centrally and supplied to all schools.

Later on with the establishment of the State Institute of Science Education and the State Institute of Education efficiency of science teachers was increased through condensed in-service courses. Recently a UNICEF aided pilot project was started in selected primary and middle schools of selected districts, which has helped in the improvement of science education.

Upgrading of science syllabus

Advancements in the areas of science and technology prompted the Government to increase the standard of science education at all school levels. Through different subject-committees, the entire syllabus from the primary to the secondary level was upgraded. More or less it was on the pattern of NCERT with certain modifications. The syllabus of Basic

Training Institutes for primary school teachers was also upgraded.

Training of teaching through correspondence-cum-institutional training

First of all teachers of science education of training colleges were oriented at SISE, then these educators at their respective colleges started orientation courses for science lectures and teachers of H.S.S. These persons afterwards took the entire responsibility of the training programme as resource persons. Syllabus for training was converted into number of lessons and got printed for distribution to each teacher. The curriculum guide books on physics, chemistry and biology were also printed. New Mathematics was also included in the training programme. The duration of this training was one year with a final test at the end. An incentive was also proposed in the form of advance increment or cash award after completion of training The training work started through the school-complex system. On each Sunday a limited number of teachers assembled at fixed centres and the resource persons reached there and tried to solve the problems of the teachers in their given lessons. During vacations, institutional training was given at H.S.S. centres.

Radio lessons and T.V. programmes have also vitalised science education. The activities of science-clubs and preparation of students for appearing in Science Talent Search Competition are compulsory items for each Higher Secondary School of the state. The Science fair is a permanent feature at district and state level every year.

The entire development programme is extended to all regions whether rural, urban or tribal and to all sections of the community. Rural talent scholarship holders are generally offering science subjects and are doing well in model schools of the state.

In the Hoshangabad District an experimental project of teaching science with indigenous material with given teachers and modified syllabus is going on very successfully. People from the Tata Institute of Fundamental Research and from Delhi University have taken up this innovatory research task.

Revised Curriculum of Primary Education in the State of Maharashtra

Smt. C. V. Padhye

Background

The revised curriculum for standard I to VII was prepared during 1964-66, by an ad-hoc committee. This committee was represented by teachers, teacher educators, educationists, and educational administrators. The first draft of this committee was ready in 1965 By 1966, the report of the Indian Education Commission was out and the committee thought it worthwhile to revise its report in the light of the Commission's Report. So in 1966, the committee submitted its report to the State Government which accepted it and it came into force from June 1968 in a phased sequence.

Need for Revision

1. After the second world war, the world map changed to a great extent. Empires collapsed and countries of the third world became independent one by one. Also, after the second world war science advanced by leaps and bounds and its impact reached the common masses. Speedy transport, efficient and quick means of communication came within the reach of the common man. Population also increased to a very great extent. To sum up, in the post-war world, there were three explosions for the man to face, (i) explosion of knowledge, (ii) explosion of population, and (iii) explosion of human aspirations. Till that time, food, clothing and shelter were three basic needs of man. After the second world war, education became the fourth basic need.
2. At the national level also we felt a need for change of curriculum. India had achieved freedom in 1947. Basic education introduced earlier had failed. Problems of free India were different from those of India under the British rule. Independent India required also a new social order. So the national goals had to be reflected in the education system.
3. At the state level, the felt need was even greater and immediate.

to the reorganisation of states, three parts of three different states
stituted the present Maharashtra - Marathwada, Vidarbha and
tern Maharashtra. They had different patterns of education,
rent syllabi and different sets of textbooks. This state of affairs
been causing difficulties in transferring pupils from one region to
other. Hence common pattern, common syllabus and common
books were the need of the time.

s

ectives of the new curriculum can be classified in three broad
es:

National objectives
State objectives
Objectives for individual development of the pupils concerned.

hin the frame-work of the pattern suggested by the Indian Edu-
ommission three objectives had been adopted.

eatures of the curriculum

curriculum was objective-oriented. Together with general objec-
s, the curriculum gives subjectwise objectives, standard-wise
ectives with specifications, and the teachers are expected to specify
-wise objectives and even lesson-wise objectives. To bring about
change, the State Evaluation Unit had been established and it
ducted orientation courses at state level, regional level, and at
rict level for teachers and teacher educators, etc.
s is an activity-oriented curriculum The curriculum itself pro-
es different activities in language teaching, mathematics, etc.
s curriculum caters for the needs of average as well as gifted pupils.
mphasises the importance of science right from standard I (through
munity living for standards I and II and as a subject from
dard III).
ecognises the importance of subjects like physical education,
sic, art, drawing and craft.
ecognises the importance of learning rather than teaching and
hasises inculcating self-learning habits in pupils.

of subjects

Languages—Mother tongue, Hindi from standard III, English from standard V.
Mathematics
Community living
Science
History, Civics

6. Geography
7. Physical Education
8. Work Experience
9. Art and Craft
10. Music.

Implementation

1. In order to facilitate proper implementation and achieve qualitative improvement of primary education, all state level institutes were geared up. Orientation courses were organised at state level, regional level, and district level for teachers, teacher educators and extension officers. Education Officers were also oriented for this purpose.
2. To bring about change in the training programme of teachers, a new diploma course was started. It is a post-S.C.C. two-year course.
3. In order to give the proper perspective of the curriculum to the teachers already in service, in-service training programme was started.
4. In-service training courses for extension officers were also started and orientation about the new curriculum was one of the objectives of these courses.
5. Standard-wise teacher guides were prepared by SIE.
6. School complex programmes also helped to raise the standard of education in primary schools.
7. A monthly—'Jeevan Shikshan' published by S.I.E. Pune, brings out articles, useful for teachers to improve their teaching.
8. Professional associations of teachers were taken into confidence for effective implementation of this curriculum.

Problems and issues

1. Up till now not much attention has been given to subjects like work experience, art, music in the in-service training programme of teachers.
2. Physical Education also remain only at the theory level at T.T.Is. No attention could be paid to help teachers achieve sufficient skills necessary to teach physical education in primary schools.
3. Work experience taught in schools and those taught in T.T.Is. were not adequately correlated.
4. During the expansion period a number of Non-S.S.Cs had been recruited as teachers. A large number of them could not complete their S S.C. and undertook the new D.Ed course. Hence there was a backlog of untrained teachers. The teachers are now being trained through correspondence-cum-contact course.
5. State curriculum has a general science syllabus whereas State Institute of Science Education orients teachers to implement discipline-wise

syllabus prepared by N.C.E.R.T.

6. There were some missing links in the primary and secondary curricula. Those missing links were identified very recently and steps are being taken to link the two curricula in a proper manner.

Curriculum Development in Maharashtra State at the Secondary Stage

Sushila Bapat

The curriculum for the Secondary stage in Maharashtra State has been revised and implemented between 1972 and 1975 gradually from Standard VIII to X. Different subject areas have been introduced keeping in view the recommendations made by the Kothari Commission.

In April, 1966 the Government of Maharashtra issued a White Paper in order to acquaint the public with reconstruction of educational system in the State. The White Paper emphasized the objectives of modernization, scientific outlook, development of healthy attitudes necessary for social change and the place of creativity and free thinking through education.

It may be interesting to know the position existing before the introduction of this curriculum. In the four parts of Maharashtra there were different Boards of Secondary Education having different patterns. Science and Mathematics were compulsory in Western Maharashtra and optional in others, whereas English was compulsory in Vidarbha and Marathwada and Science and Mathematics optional. Work experience and social service were totally new subjects for all the areas. The government wished to have some uniformity at least in the pattern of education with a view to coordinating other matters like grants-in-aid. Moreover, government had before it the need for introduction of vocational education at the +2 stage.

The Secondary Educational Board is the competent authority for introduction of curriculum. It is an autonomous body. However, it has government department representatives, university teachers, representatives of teachers and H.M.S., and local body representatives, and so on.

In 1972-73 the work regarding change was restricted to Standard VIII only. 1973-74 it was taken to Standard IX and in 1974-75 to Standard X, the terminal stage.

The need for orientation of teachers in all subjects except languages was an urgent one. The orientation had two aspects:

(a) Enriching the content of knowledge.

(b) Acquaintance with new techiques and methods.

The content in most of the subject areas was enriched and the approach had to be changed and involvement of students was expected in the learning process. Methods for self-learning had to be introduced among the teachers.

The State Institute of Education in collaboration with universities and Institute of Science and Institute of English did the work of orientation for all subject teachers except the mother tongue and social sciences on a large scale during these years.

Not less than 15 days (and upto 1 month) training was given to teachers in English, Biology, Physics, Chemistry, Work Experience, etc., in 40 different areas.

Handbooks and instructional materials were prepared in large numbers and were distributed to all the teachers free of cost.

The follow-up and training of teachers in new language teaching techniques was entrusted to Extension Services Departments at district level.

Work-experience

The roots of work-experience can be traced back in the concept of craft as a centre for instruction. Maharashtra was well conversant with it. Before introducing this subject in the curriculum on a general basis, an action-research project to develop appropriate programmes was organised by the State government. During the first phase of this action-research objectives of work-experience were identified. A certain area in two districts was selected for basic experimentation. Instructional materials and techniques relating to the subject were developed. In the second phase a pilot programme in 570 schools from all districts was undertaken for field test of materials and techniques which had been developed.

In phase III the project was evaluated and then the subject was introduced on regular basis. No books are prescribed for the subject. Only handbooks for teachers are provided.

We are contemplating on the extent of freedom to be given to schools in matters of curriculum. In work-experience the State Board of Education has kept a provision to allow the schools to select any work-experience suitable to the environment.

Impact

The curriculum was much appreciated in the beginning by all in the field of education. Schools tried to equip themselves as much as they could. Government also helped the schools by allowing the expenditure incurred on equipment as admissible for grants-in-aid.

Problems and issues

1. The results of S.S.C. Examination for the first batch which appeared

in 1975 threw some light on the problems. A number of schools had 20% pass results only, clearly indicating that the teachers lack the new techniques to be followed, specially from rural and tribal areas. The failures are in Science and Mathematics and good teachers for these subjects are either not available in the rural areas or if recruited by some special attempts they leave the job as soon as they get one in urban area or in any better field.

2. The +2 stage was a great hope to students wherein vocationalisation was to be introduced on a large scale. Hopes have however been belied. The +2 stage offers no such facility.
3. The extent of freedom offered in the curriculum in certain school subjects like work-experience, social service is not satisfactorily utilised by the institutes and proper resources are not tapped. It seems that these being non-examination school subjects there is some tendency to pay less attention to them.
4. An attempt to introduce O & S courses was tried in the beginning. The idea had to be given up as criticism from all corners was received on the policy.
5. The Inspecting Officers in the districts who are expected to supervise and guide the secondary schools in academic matters are so much over-burdened with administrative work that they find absolutely no time for discharging these duties.
6. Success in implementation of curriculum of whatever type depends upon sincere attempts on honesty, talent and capacity of teachers. Unless we are able to attract such persons to the field much cannot be expected. It is only through proper rapport of teachers with students, and of administrators with teachers, that these objectives can be achieved.

A Case Study of Curriculum Development in Manipur (Primary and Secondary)

L. S. Singh

Background

School curriculum framed by the government enlisting school subjects like languages, mathematics, history, geography and sciences with little guidelines about areas and topics to be covered and achievements to be made by students for public examination continued to guide school programmes in Manipur for a long time. This state of affairs remained unchanged till 1965 when the education department adopted changes in the school curricula.

The pattern of classes at present are as follows:

1. Pre-primary classes for 1 year
2. Lower Primary classes—Classes I-II
3. Primary classes--classes III-V
4. Upper-Primary/Middle Schools—classes VI-VIII
5. Secondary/Higher Secondary classes—classes IX-X/IX-XII.

Objectives

The objectives of the curriculum in the primary and secondary stages are understanding of the physical environment, developing desirable social habits, participation in social life, inculcation of democratic ideals and values, etc.

Curriculum innovation

For the first 3 years, textbooks are prescribed for languages and arithmetic only, and social studies and general science are taught with the help of teachers' guides.

Three languages are introduced in the primary classes—Mother tongue from primary classes, English from class III and Hindi from class IV.

The government of Manipur have approved introduction of Tribal dialects as medium of instruction and medium of examination from pre-primary classes upto class V recently. From class VI they switch over to Manipuri (Meitei) as medium of instruction and medium of examination.

Manipuri as a language subject is also added from class III for tribal students. Thus at the stage of class IV a tribal student has 4 languages Mother tongue, Manipuri (Meitei), English, and Hindi.

Production of textbooks in tribal dialects has been very slow as there are very few pupils belonging to a dialect and production of textbooks for a few hundred pupils becomes very uneconomical.

Integrated courses of Social Studies are introduced in classes III-V. Interesting topics of history and interesting anecdotes of important personalities, useful topics of geography, civics are included in the syllabus. From class VI to XII history, geography and civics are introduced as separate subjects.

Problems and issues

Textbook writers have not fully grasped the meaning of syllabus and no good textbooks have been produced. Incompetency on the part of the teachers, however trained they are, has worsened the situation with the result that History and Geography have become the most dull and dreaded sub'ects in the schools. Examination reforms have however, remedied the drawbacks to some extent.

Prior to 1965 the study of Science in the schools started from class VII only. Intsoduction of the new curriculum has now been started from class I. But difficulty in appointing teachers and production of textbooks came in the way and teaching of science in the schools became almost a failure. The students could not really deal with scientific problems.

A break-through in the methods of teaching has been the implementation of science education programme according to the guidelines developed by NCERT. Instructional materials including the new textbooks, science kits, etc. have also been developed. But there is still the problem of teachers specially in the Middle Schools where we have only 40% qualified science teachers. Our immediate issue at hand is appointment of these (subject) teachers in the Middle and High Schools.

Science Education at the School Stage in the State of Manipur

Mohendra Singh

Objectives

While speaking of 'Science Education' at the school stage, one primarily considers the teaching of Physical and Natural Sciences alongwith Mathematics as a preparatory step for the next higher course which a child is planning to pursue for his/her professional career. But during the last few years, considering the modern technological society, educationists and social scientists view it as an integral part of the study of the knowledge to be acquired by each and every citizen, not only to have a better understanding of the present-day world but also to improve their material status. A summary of how this new ideal of Science Education was developed in the State of Manipur is given below.

Background

Taking an overview of the developments in the subject we may divide it into two periods: (1) from the year 1948 when the Gauhati University was established to the year 1964 when the State Government revised its primary school curriculum and, (2) the period during which the revised curriculum was being implemented, covering ten academic years, i.e., from 1965 to 1974.

In the first period, i.e. 1948 to 1964, there was a four-year class-structure in the Secondary Stage, namely, classes VII-X, and the medium of examination was English from class VII onwards. Thus, the first two years (classes VII & VIII) were initially a preparatory stage for the last two years of schooling. In the first two years, Science and Mathematics were taught as core-subjects from the text-books prescribed by the University for matriculation. But in the last two years of schooling, i.e. in classes IX-X, Science was taught as an elective subject though Mathematics or Arithmetic with Domestic Science for girls was retained as a core-subject.

In the second phase, from the year 1964 onwards, the most visible changes/modifications were the class-structuring and the introduction of the new curriculum for science at the primary stage. Since then, the school pattern has been remodelled as :

(i) Lower primary (having classes I & II).
(ii) Primary (having classes III-V).
(iii) Upper Primary (having classes VI-VIII).
(iv) Secondary (having classes IX-X/IX-XI).

With this modification in class-structure, General Science was introduced as a core-subject for the primary stage with the syllabi drafted by an ad-hoc committee and approved by the government of Manipur. The switch-over in the medium of examination from English to Manipuri for classes VII & VIII could also be mentioned here. The General Science textbooks in Manipuri written by subject experts, and reviewed and recommended by the Education Directorate, were for classes III-V and VI-VIII. Since no redrafting of science syllabi for the Secondary stage (classes IX-X) was done, the old prescribed science textbook was adopted as the textbook for that stage without any enrichment in the content. Nothing more can be mentioned with regard to Secondary Education except the disciplinary approach taken in science subjects for those Higher Secondary schools affiliated to the Central Board of Secondary Education, New Delhi.

The emergence of the Board of Secondary Education, Manipur in the year 1971, brought no major change in science curriculum or in syllabus except the addition of a few more relevant topics for the XII class to meet the changes in College Education.

Innovation

With the launching of the pilot phase of the UNICEF assisted Science education programme in fifty selected primary schools/sections and in thirty selected Upper Primary schools/sections for Primary and Middle levels respectively, from the academic session 1975-76, the Education Directorate and the State Institute of Education planned to improve the School curriculum for the Primary stage. Henceforth, Science education in Primary classes was taken as one of the basic units of education regarding the child's understanding of this environment.

The new improved syllabi and instructional materials of NCERT was introduced in a phased manner from the academic year 1977 for classes III-V and from 1978 for classes VI-VIII by adding 450 Primary schools/sections and 180 Upper Primary schools/sections respectively. So far, 65% of the Primary schools and 35% of the Upper Primary schools have been covered under this programme.

Impact

Innovations in the method of teaching Science in the Primary and Upper Primary stages under the UNICEF-assisted Science Education

Programme was very much appreciated by the teachers and the general public. Success in the programme encouraged the Department of Education, and more attention is now being paid to expanding the scheme.

Problems and issues

(a) *Teacher-Training for Science*

Out of the four Government Teachers Training Institutes, viz., three Basic Training Institutes and one Basic Training College, Science has been made a core-subject in the curriculum of the latter from the academic session 1976-77. Prior to that, Science was an elective subject for the course of that institute. The State Government has further approved the introduction of Science as a core-subject in the other three remaining institutes from the forthcoming session so as to meet the universalisation of the Science Education Programme at the Primary Stage.

In the government Post Graduate Training College affiliated to the Gauhati University, there is still no provision for training teachers in Science. The State Government in collaboration with the Board of Secondary Education, Manipur is planning to include this subject as a certificate course.

(b) *Science curriculum at the secondary stage*

As has been mentioned earlier, there are no specific changes in curricula for the Secondary stage. Considering the new developments at the Primary stage, the Board of Secondary Education, Manipur, has drafted a new curriculum for the secondary schools, and Science along with Mathematics has been considered as the core-subject giving 32% of the total time allocation to Science and Mathematics.

Curriculum in Meghalaya—A Case Study

Miss Ginnette Lyngdoh

Meghalaya is one of the states in the north-eastern part of India. It consists of Khasi Hills, Jaintia Hills, and Garo Hills. Comparatively the educational system is more developed in Khasi Hills area, Shillong in particular, which is the capital of Meghalaya. But on the whole it is still in the developing stage.

Before 1972, school education was under the Assam Secondary Board with the exception of schools in the rural areas—but after that it was taken over by the Meghalaya Board of Secondary Education which is situated in Tura that is in the Garo Hills.

We also have the Directorate of Public Instruction, the SCERT, which was established just about a year and a half back, the District Council and also the Inspector, Deputy Inspectors, and Sub-Inspectors of Schools.

Most of the schools in Meghalaya especially in Shillong are government-aided but missionary-managed, and usually these schools produce better results than those entirely managed by the government or various committees.

There are also various Vernacular Schools like Bengali, Assamese, Hindi and Khasi schools.

Educational pattern

Stage	*Class*	*Subjects*
Primary	I to III	Mother tongue, Arithmetic, Geography, Drawing, History and English in Urban Schools.
Middle English or Middle School	IV-VI	Same as above with the inclusion of History and English in the rural schools and Mathematics & Social Studies in the Urban Schools.
High School	VII-X	English (two papers), Mother tongue or Hindi, History, Geography,

General Science, Public Administration, Mathematics, Additional Mathematics, Domestic Science.

There are no Higher Secondary Schools in Meghalaya.

Art and Craft are given due importance but the choice is very limited. In the rural shools, especially Khasi Schools, needle-work is greatly stressed. In some schools of the Urban areas painting, music (mainly piano) and Indian classical dance are offered.

Co-curricular activities

Sports are given much importance. Inter-school sports competitions are held every year not only in the urban areas but also in the rural areas.

Work experience

Attempt has not been made to introduce work-experience because of financial difficulties and because there are no trained teachers for it.

Non-formal education

There is a department of Social Education which looks after non-formal education. There is no prescribed syllabus for it but now they are trying to develop it.

Examination

The Meghalaya Board of Scondary Education conducts the High School Learning Certificate Examination every year either in the month of March or April. The students appear for this examination after the X class. But there are three schools where students give their Indian School Certificate Examination after their X class. This examination is conducted by the Delhi Board.

Problems and issues

Most of the problems mentioned below relate to rural areas.

1. In Primary Education, educational wastage and stagnation is there.
2. The present generation is the first generation to receive education, especially in the rural areas.
3. Parents prefer their children to work in the field.
4. Education is not related to everyday life.
5. There are no proper textbooks. SCERT is very much conscious of this problem and now it has started evaluating the text books.
6. There are no facilities with regard to building, furniture, etc.
7. Most of the teachers in the Primary and the Middle Schools of the rural areas are non-matric or, if they have passed matriculation, are untrained. In the Urban areas also most of the teachers are untrained.

To solve this problem SCERT has been organising in-service training for teachers.

8. There are no teacher-parent associations, not even in the urban schools.
9. Language problem is also prevalent. Students of vernacular schools especially those of the Khasi schools find it very difficult to cope with their studies when they reach class VII because their medium of instruction is Khasi till class VI and after this English is the medium of instruction.
10. From the last three years' matric results, it was found that most of the students who fail usually fail in either History, Geography, or Mathematics. This year SCERT is conducting an in-service training for teachers in these three subjects only.

Primary Curriculum Development in the State of Orissa

Miss Margaret Behera

Background

In Orissa, the current Primary curriculum for classes I to V came into force from the 1963 School year and that for classes VI through VII from 1969-70 respectively.

On 15th November, 1961 the Government of Orissa appointed a syllabus and textbook committee in order to advise them on the different aspects of primary education including revision of curriculum.

The first meeting of this committee was held on 19th November 1961 under the chairmanship of Shri Biju Patnaik (the then Chief Minister) in which the purpose for setting up the committee was explained. It was felt by the committee that particular attention should be given to the changed condition of the country and definite targets be fixed for achieving the objectives. It was further decided to devise necessary ways and means for including not only the reorientation of the curriculum but also the nature of textbooks and methods of teaching. Accordingly, it was decided that due emphasis should be given to subjects like Science and Mathematics. The environment of the child as well as the books he reads and the activities he is engaged in should be considered and wastage and stagnation avoided as far as practicable. The curriculum should begin with simple matters preparing the child's mind gradually for the complex requirements of the society.

Objectives

1. Education till the end of class VII should be covered at the primary stage.
2. The spirit of reforms intended for primary schools should also continue at the secondary and university level.
3. English should be taught from class IV with special emphasis on habits of correct speech.
4. Scientific and technological bias should be given to the entire educational system starting from primary education.
5. The mother tongue as well as arts and crafts should be studied with

due emphasis on the requirements of modern life.

6. Social studies should be given much greater importance with special emphasis on national integration and development of citizenship qualities.
7. Textbooks should be nationalised and an organisation should be set up with a fully-equipped printing press for implementing the scheme. The textbooks should be the same in all the schools of the state.

Implementation

1. Further as per the recommendations of this committee a permanent Advisory Board was set up under the name of the Board of Primary Education to advise the government on matters of curriculum, examination, etc. with regard to Primary education from class I to VII.
2. The new curriculum was introduced from 1963.
3. Refresher Courses and in-service training were organised by the State Institute of Education for teachers and inspecting staff for the effective implementation of the curriculum.
4. Some of the teacher's handbooks were prepared in order to explain the spirit behind the new curriculum, the best way of imparting instruction on a particular subject, the best way of managing the school and the right manner in which a teacher should conduct himself in order to develop the personality of each pupil.

In the meantime the Indian Education Commission 1966 gave a new orientation to school education. They defined afresh the objectives of education in the changed context of Indian society. Hence there was a shift in emphasis from the purely individual benefits to education being an instrument of social change.

Accordingly, there were revisions of some textbooks like Social Studies and General Science. Science books prepared by NCERT were adapted for the purpose. Health Education, Work-experience and other activities were also included.

In 1977 as per the Government order the Ungraded System was introduced. Accordingly Annual Examination upto class III was abolished. In its place, internal assessment was introduced. Each subject has been divided into several units and sub-units. Remedial classes are held for slow learners. It is being contemplated that similar system would be introduced upto class V.

Our S.I.E. is not the Curriculum framing authority in the state. The Director and some of the members of the Institute are on the committee or sub-committee (subject-wise) in their own capacities. Their views cannot be considered as the views of the S.I.E. Nevertheless the S.I.E. plays a role of importance in its own way.

It organises in-service training courses for primary school teachers, Sub-Inspectors and School-Complex teachers. In this context special mention may be made regarding the Science teaching programme. Some primary school teachers and sub-Inspectors of schools were trained to use the science kit boxes and prepare improvised aids for teaching science effectively. Nearly 10,000 primary school teachers were oriented.

Organising School-Complex : As a pilot project, the State Institute of Education has organised 40 school complexes tagging 40 high schools to their nearby primary schools—

Problems and issues

The following important points affect Primary Education in our State :

1. Large percentage of illiteracy.
2. Large percentage of Adivasi and Harijan population and their sub-standard condition of living.
3. Numerous small villages and hamlets.
4. Enormity of unemployment.

Specific features

According to 1961 census the percentage of literacy for the total population of the state was 21.66 as compared to 24% for India as a whole. According to 1971 census the percentage of literacy has gone up to 26.11 as against 30 percent for India as a whole. These figures will be found to be misleading when we take into account of the fact that of the total population 2½ crores (approximately) 40% of the population belong to the tribals and scheduled castes. The percentage of literacy among them was only 7.4 in 1961 and 11.6 in 1971.

Secondary School Curriculum in Orissa

Bhagyadhar Mohanty

Background

We have at present 11 years' schooling pattern in Orissa of which classes VI through XI come under Secondary Education. In some places the lower two classes i.e., class VI and VII are separated and the school having only these two classes is known as lower secondary school or Middle School. Similarly schools having four higher classes are known as High Schools or Secondary Schools. As it is already stated in the report regarding Primary education, we have five years' Primary education out of which the first three classes are known as Lower Primary and the rest two classes i.e., IV and V are known as Upper Primary. Recently our state government decided to have some Higher Primary schools having classes upto class VII. As a result some Upper Primary Schools are upgraded upto class VII and in some places some M.E. Schools were merged in the nearby Primary Schools to upgrade them to class VII. Thus we are now having lower Primary Schools, Upper Primary Schools, Higher Primary Schools, M.E. Schools and High Schools.

Curriculum cell

For the preparation of curriculum or having any sort of modification in the existing one, there is a curriculum-cell in the Board of Secondary Education.

We are now having subjects like M.I.L., English, a third language, General Science, History, Civics, Geography, Mathematics, and one optional subject as examinable subjects in Secondary education. A pupil can take either Oriya, Hindi, Bengali, Urdu or Telegu as his M.I.L. subject. The Third Language paper for students offering Oriya as M.I.L. is either Sanskrit, carrying 100 marks or Sanskrit and Hindi both carrying 50 marks each, whereas for students offering Hindi as M.I.L. it is both Sanskrit and Oriya, of a lower standard, each carrying 50 marks. But for students offering M.I.L. other than Oriya and Hindi, Oriya is compulsory carrying 50 marks (lower standard) and one of the languages like Sanskrit, Hindi or Persian, carrying 50 marks. General Science, History, Civics and Geography both carry 100 marks each. Prior to this, there was Social Studies in place of History, Civics and Geography. Since 1961, though Mathematics is a compulsory subject for boys, it is not compulsory for girls. They have the option to take Domestic Science in place of Mathematics. Since Domestic Science is a comparatively easier subject most of the girls offer this, in place of Mathematics. As a result, the number of lady science graduate teachers having Mathematics as a subject is decreasing day by day. Fortunately, our State government is thinking now to make Mathematics again compulsory for both boys and girls. As the optional subject, a student can choose either Mathematics, Sanskrit, Physiology and Hygiene, or Higher Sciences. This paper carries 100 marks.

All these subjects are examinable. Besides these, subjects like Drawing, Gardening, Crafts, Games and Sports etc. are also included in the Secondary curriculum. Recently Work-Experience and Community Development programmes were also introduced.

In most of the schools, the medium of instruction is Oriya. In schools like Convents, Stewart, D.M. Schools and Central Schools the medium of instruction is English. In these schools the curriculum is totally different. There are also a few schools, having medium of instruction as Hindi, Bengali, Urdu or Telegu.

Supervisory system

In every district, we have one Inspector of Schools who is responsible for supervision in secondary schools. There are also subject experts in the Board of Secondary Education who always go round the schools to supervise the teaching of their respective subjects. There are now two types of schools in our state: government schools and private schools.

Evaluation system

At the end of the course, i.e., after completing class XI the pupils have to appear in the annual examination. This exsmination is conducted entirely and contrelled by the Board. Generally this examination is conducted in the month of March and the candidate who does not pass, has the option to appear at the supplementary examination. For smooth conduct of the examinations squads appointed by the Board go round the centres. Inspectors of schools also go round the centres situated in their respective areas.

After the examinations are over, the papers are examined centrally by inviting experienced teachers to a particular place. They examine them in that centre, and after they are checked by the chief examiner the marks are posted in the tabulation sheet. This is really a good system and we are getting better results by adopting this procedure, A student is declared as having failed if he secures less than 30% in any subject. If a students fails in any subject and passes in the aggregate he is allowed to appear in that subject only as a compartmental candidate, but he is not given any division even though his aggregate may deserve a division.

The 10 years' schooling pattern has not yet been introduced in our state.

Primary and Upper Primary Curriculum Development in Rajasthan

A. Haneef

Background

The State of Rajasthan came into existence in the year 1948 with the merger of the princely States of the then province of Rajputana. The process of merger started in the year 1948 and ended with the merger of Ajmer in the year 1956. Three fourths of the population of the state is rural out of which the majority is agrarian. The rural population is widely distributed in desert, tribal and hilly areas.

The structure of the School system

The present school system includes --

1. Pre-primary education (two years);
2. Primary education (five years);
3. Upper primary education (three years);
4. Secondary education (two years); and
5. Higher Secondary education of one year's duration.

The primary schools of the rural areas are under the direct control of the Panchayat Development Department. The Primary Schools of Urban areas, Upper Primary schools, Secondary and Higher Secondary Schools are under the direct control of Director, Primary and Secondary Education, Rajasthan, Bikaner.

Apart from the Director of Primary & Secondary Education, Rajasthan, the other special agencies dealing with quality improvement of Elementary Education are:

(1) State Institute of Education, Udaipur
(2) State Institute of Science Education, Udaipur
(3) Deptt. of Audio Visual Aids, Ajmer;
(4) Education Technology Cell, Jaipur and
(5) Rajasthan State Textbook Board, Jaipur.

The Board of Secondary Education, Rajasthan, is directly concerned with the curriculum development at the Secondary Stage and is an autonomous Board. The Rajasthan State Text Book Board, now an autonomous body, is charged with the responsibility of publishing textbooks for the Elementary stages.

Curriculum development in Rajasthan

Before merger, every princely state as a legacy had the British system of education. This was an education for the elite. The examination after class VIII, was a public examination conducted by Registrar, Department of Examination and a certificate used to be awarded after passing the examination.

In the year 1957, the first curriculum based on Basic education was introduced by the Department of Education. The major goals were intended to relate education with life. Separate curricula were prepared for children opting for craft and for those who were not willing to opt for craft at the Upper primary level. Certain recommendations were made by the curriculum framers regarding training of teachers, conversion of traditional schools into Basic schools and financial grants so that the curriculum may be implemented effectively. For better textbooks, specifications were published by the Department which includes instructions to authors and the press.

Since there was no single unified body directly responsible for qualitative improvement in school education, the Government established the State Institute of Education in the year 1963 Its main areas of activity are Research, Training, Extension and Publication. It has a close liaison with NCERT.

The existing curriculum has been in use for 16 years. This was developed by a committee appointed by the Government of Rajasthan in July, 1965. The Director, State Institute of Education was the organising Secretary of this committee. The reasons for framing this curriculum were :

1. To link education with national development.
2. To maintain uniformity and standards for all schools of the State irrespective of their management.
3. To link education with life.
4. To acquaint the teachers with the general objectives as well as instructional objectives.
5. To up-date the curriculum.

The specific features of this curriculum are :

1. Goals and objectives of Primary and Upper primary education and instructional objectives for each subject have been clearly mentioned.
2. The curriculum has been developed on concentric plan.
3. As per recommendations of the Kothari Commission, Work-Experience and Social Services and Third Language have been

included.

4. In Primary classes, an integrated approach to Social Studies has been made while in Upper Primary classes History, Geography & Civics have been separated from each other but still form a part of social studies.
5. New Mathematics and English as Second Language have been introduced in Upper Primary classes.
6. Four minority languages—Urdu, Sindhi, Gujarati, Punjabi have also been included at the Primary and Upper Primary stage.
7. There would be no third language for those who offer a minority language.
8. Due importance has been given to the new educational streams such as national integration, population education, national savings etc.

The present curriculum and the textbooks were evaluated by a team of NCERT experts, classroom-teachers, subject specialists and other experts in the light of the framework on 10-year schooling published by the NCERT. The purpose was to articulate it with the Secondary School syllabus of the Board of Secondary Education, Rajasthan and the Central Board of Education. Now it is again hoped that it would be reviewed at SIE in the light of Ishwar-Bhai Patel Committee Report. The review committee for each subject consists of (i) one expert from training college (ii) one person from SIE (iii) one or two teachers from primary or Upper Primary Schools.

Innovative practices

1. *Ungraded unit system for the first two and four years of schooling in Rajasthan*

The ungraded unit system was introduced in 1972 in all the primary schools of Rajasthan by the Education Department for the first two years of schooling.

2. *Multiple-entry system*

There is multiple-entry system in the State upto class VI. The children seeking multiple entry have to provide a certificate that he/she has not studied in any school. This has proved very useful for promoting non-formal education.

3. *Primary school health service in Rajasthan*

On the recommendation of the State Level Review Committee, a six point Elementary School Health Service Programme started in the year 1975 in all primary and Upper Primary Schools situated at the Headquarters of Primary Health Centres and Rural Dispensaries of Rajasthan. The State Institute of Education, Medical & Health Department and Community Development Department are involved for effective implementation of the programme.

4. *Three-hour schools in Rajasthan*

The State Institute of Education launched this programme in the year 1965 in Shahpura town of Bhilwara to (i) encourage the parents to send their children to schools according to their convenience (ii) solve the problem of irregular attendance, wastage and stagnation to some extent, and (iii) help schools in serving the community in a better way. These schools follow the same syllabus as followed by regular schools minus craft, games and physical activities.

This idea of three-hour school has also been accepted by the Ishwarbhai Patel Committee.

5. *Children play centre*

Keeping in view the suggestion of Education Commission 1964-66 on pre-primary education, the State Institute of Education established Children Play Centres in 50 primary and Upper Primary Schools under Extension Centres attached to TTI's. The main idea behind such centres is to attract children to school, to acclimatise them to school environment, to retain them and to build readiness in them for school learning.

6. *Integrated approach to primary education*

This project was started in 20 schools of Alwar District by NCERT in February 1974. The main feature of this innovation is the attempt to help the children to explore, experience and study particular phenomena of life without restriction of subject boundaries.

7. *Use of waste material*

Efforts are being made to use waste material for preparing teaching aids and developing interest in creative arts among children. Teachers of Primary and Upper Primary schools are trained every year for this purpose. The State Institute of Education also has started using puppetry in teaching-learning situations.

Problems and issues

1. The literacy of women in Rajasthan is only 9%. Formal or nonformal measures are to be devised to accelerate the progress of women education. Sewing and knitting machines have proved quite useful in attracting women at formal or non-formal education centres.
2. More research work is needed in order to relate curriculum with needs, interests and aptitudes of the pupils,

Secondary School Curriculum of Rajasthan Board —A Case Study

Lalit Mohan Tewari

The Board of Secondary School Rajasthan alone is responsible for framing and implementing the curriculum of secondary classes. It also conducts Secondary and Higher Secondary examinations in the State.

According to Rajasthan Secondary Education Statute 1957, Rajasthan Board was established in 1957, in order to regulate Secondary Education in the State and to develop it in a scientific and progressive way.

The Syllabus Committees appointed for different subjects are responsible for the development and renewal of the syllabi.

Recognition to schools is accorded by the Recognition Committees appointed by the Board.

Vocationalization of education

In seventeen Higher Secondary Schools of the District, vocationalized courses at the Higher Secondary classes are being run. The courses are :

1. Pump Mechanic
2. Carpentry and furniture making
3. Radio and Transistor Repairs
4. Auto-mechanic
5. Motor-winding
6. Tailoring
7. Steno-typing and Secretarial practice.

Evaluation

From 1944, the Board of Secondary Education started Evaluation Workshops in General Science and optional Sciences to train teachers in preparing objective-based questions. The aim was to make the examination system more objective. Teachers were trained in framing all types of questions such as multiple-choice questions, very-short-answer-type, short-answer-type and essay-type questions. Training in Science subjects was followed by training in all the remaining subjects.

At present each paper has two sections. In Section A only multiple-choice, and very short-answer-type questions are set while in Section B short-answer and essay-type questions are set.

The Board not only trained teachers in framing objective type questions but also trained them in formulating instructional objectives in various subjects, in terms of expected behavioral changes.

Correspondence course scheme

The Board established its Correspondence Course Wing in 1968-69. This correspondence course is meant for those who want to appear in the Higher Secondary Examination as private candidates. The enrolment of such students in 1976 was 9560. As an experimental measure, personal contact programmes were also arranged for local students. The difficulties faced by them were discussed by the representatives of the Board on the spot. The personal contact programme was a success and now the Board is considering to extend it to all the students. The final decision regarding it has not yet been taken.

Internal assessment of pupil-progress

In order to develop students' total personality by way of providing them actual opportunity to participate actively and efficiently in various programmes related to their physical, mental, emotional and moral growth and development, a comprehensive scheme of internal assessment was started by the Board in 1964. Initially the scheme of internal assessment was introduced on an experimental basis in 10 selected secondary and Higher secondary schools.

After try-out and proper assessment, this scheme was extended to all the secondary and higher secondary schools of the State in IX, X and XI classes. The Board organised many workshops to orient teachers in internal assessment. Under this scheme every school organises activities in the following areas :—

1. *Physical Health*

Each student is medically examined by a qualified doctor twice in the session. Records of pupil health are maintained in the progressive report card. If any major defect is found in any child, the case is referred to the medical and health authorities.

2. *Mental & Scholastic Achievement*

(a) In class IX three periodical tests and two examinations are organised. The proportion of marks for tests and examinations are as follows :

Tests	15%
Half Yearly Examination	35%

Annual Examination 50%

Marks are recorded in the progress cards and sent to the guardians regularly. Students in class IX are promoted to class X on the basis of marks obtained by them in the examinations. For classes X and XI only the Board's examination is considered for promotion, but a cumulative record of tests and internal examinations is kept and an internal assessment certificate is issued to the student by the Headmaster under the seal of the Board.

(b) Some of the schools which have trained personnel administer two types of intelligence tests to their pupils, viz., verbal and non-verbal at the beginning of the session. The students are categorised on the basis of the scores. The results of the students are compared with the students' scholastic achievement and diagnosis is made if there is any deviation and remedial measures are taken.

Supervision of this scheme in schools

The Board of Secondary Education, Rajasthan, Ajmer has appointed a panel of Inspectors who make on-the-spot evaluation of the programme and appreciation certificates are awarded to schools showing excellent results.

Primary Curriculum Development and its use in Tamil Nadu

Sushila Purushothaman

Introduction

A curriculum is a means to an end; it must aim to educate and humanise the whole man, and the schools must aim at developing the integrated personality of the child in all its manifold aspects. The need to make the curriculum life-centered rather than subject-centred or book-centred also finds expression in the new trends in modern curriculum. Hence the growing stress on subjects like environmental studies, social studies, the sciences and technical subjects, work-experience in its many shapes and forms and on social service activities and experiences that will be of practical and immediate value to the students on leaving schools and help to promote social and national integration which is also advocated by the Kothari Commission. The curriculum in general places a premium on bookish knowledge and rote learning and makes inadequate provision for practical activities. Education is dominated by examinations, external and internal. A truly functional and balanced curriculum will cater for the twin human-needs of bread and culture; it will help man both to earn a good living and to lead a good life.

Background

The system of education which we inherited at the time of independence had hardly any relevance to the life and needs of the society. Educational thinkers in our country from time to time began to think and advocate changes in the system of Education. In the year 1963, before the institution of the Kothari Commission, the Tamil Nadu Government had revised the school curriculum to some extent. But it was felt that in a world which is constantly changing especially in the field of science and technology, the curriculum cannot remain stagnant even for a short spell of time. Against this backdrop it became imperative that our school curriculum should be revitalised and enriched and related to the needs and aspirations of the people. Keeping this in view, expert committees were constituted and were requested to reconstruct and re-orient the syllabus for various subjects. The new pattern has been introduced in 1972 from standard I to V, in the year 1973 for standard VI, in the year 1974 for standard VII, and in the year 1975 for standard VIII.

Objectives

The over-all objective in education is to draw out and develop all the many-sided potentialities of the child- -physical and emotional, mental and spiritual in a socialised milieu in order to equip him to adjust himself satisfactorily in the world in which he is living to-day, and in which he will live tomorrow and to endow him with power to shape both these worlds, wherever necessary, nearer to his heart's desire.

The specific objective of this pattern is to develop innovative curricula and related instructional material, techniques etc. which could meet the needs of a large number of children who are likely to remain in school for only a few years. Expansion of educational facilities is to be accompanied by a qualitative adjustment of the curriculum to the life-style of the child and to the socio-economic opportunities likely to be available.

Implementation

To implement this curriculum some changes were needed in the syllabi. Accordingly, syllabus committees were formed for various subjects and languages. The syllabi were published for detailed study and constructive suggestions were given by educationists, Teacher Associations and the public. Importance was given to Modern Mathematics, Science, Art, Craft, Moral Instruction, Physical Education etc. Hand-books were prepared and supplied to teachers to enrich them with the subject-matter and the method of teaching. Before the introduction of Modern mathematics and the new pattern of Science in schools, an experiment was conducted in Primary and Middle Schools selected under the UNICEF Pilot Project and the teachers were trained in Modern mathematics and Science. Mathematics taught through 'set' language is known as modern Mathematics. In teaching of Science more emphasis is given by way of doing things and the teacher elucidating the lesson through the points given by the children. This means importance is given to the ideas of the children. In the rest of the schools, teachers were given in-service training for 15 days in Mathematics and Science during the summer vacation in the first phase. The SCERT has played a prominent role by sending resource persons to train the teachers. Science kits were supplied to Primary and Middle Schools with the aid of UNICEF. The Inspecting Officers were also trained in the above subjects and the way to use the science kits to have effective supervision.

Problems and issues

When we talk of a new pattern there would be problems also. The teachers have to be given in-service training in subjects like Mathematics, Science and English and that involved a lot of finance. The training could not be given to all the teachers at the same time. The transfer of teachers in public schools failed to serve the purpose. To avoid this, the Education Department requested the management that the transfer should take place among the trained teachers. Apart from these, the teachers themselves felt difficulties in teaching Modern Mathematics in spite of their training. Even the parents also felt the same, since they could not help the children in the home-work. The short-comings were identified then and there and remedial measures are being taken. Thus primary education is progressing successfully in the state of Tamil Nadu.

Specific features

Tamil Nadu is always in the fore-front in launching a number of new schemes in the educational field and especially to uplift the standard of Primary Education and I wish to mention some of the salient features of Primary curriculum :

1. Free supply of books to economically backward children.
2. Mid-day meals supplied to the poor and the needy.
3. School-complex programmes are there to cater to the needs of elementary schools and their teachers.

The elementary schools which do not have sufficient laboratory and library facilities, seek the help of nearby high schools to meet their needs. The Deputy Inspector of schools would be the chairman of the school-complex programme. The headmaster of the High School would be the president. Each school-complex consists of a High School, a few Middle Schools and a few Primary Schools. The headmaster of the High School would form a committee with the Middle School headmasters. In turn the Middle School headmasters would form a sub-committee with the primary School nearby. Then they discuss their problems in teaching a particular lesson and solve the problems with the help of the School-complex.

4. Book Bank Scheme was introduced in 1976.
5. School Improvement Programme is conducted often to equip the schools with essential materials. The public donates in kind or cash to the Schools where the children are studying. The things collected are radios or transistors, microscope, sewing machine, steel or wooden cupboards, uniforms, utensils, etc., and in some places T.V. also. Radios are used to listen to the educational programmes conducted by the AIR. The things collected through this programme are entered in a stock register and checking is often done by the Inspecting Officers.
6. Physical Education is a must and Internal Assessment is made on this subject.

7. The teacher Association Centres are functioning under the presidentship of the Deputy Inspector of Schools, to enlighten the teachers about administrative matters of the Department and clarify their doubts through model lessons offered by eminent teachers from outside or from the same Teacher Association Centre.
8. The Parent-Teacher Association which has nothing to do with the Teacher Associations help in the success of the School Improvement Programme.
9. Beyond these, good teachers are encouraged by honouring them with State Awards.
10. Recently an announcement was made by the Department that there would be no detention upto standard III and it is hoped that it will help to reduce wastage and stagnation.

Curriculum in Secondary and Higher Secondary Schools in the State of Tamil Nadu

Kamala Radhakrishnan

Introduction

Education has unmistakably become the symbol of hope for the future of mankind. The widely-held conviction that in education lies the key to future progress and a better way of life for all, led the government of Tamil Nadu to give educational development top priority in planning and consequently allocate to it a major share of its resources both financial and human.

Present status of education in Tamil Nadu

In Tamil Nadu education is free upto the first year of the collegiate course. A large number of scholarships and freeships operate, in addition to those for all students coming from weaker sections even upto degree level. Free mid-day meals and free books and slates are given to deserving children in primary schools. English teaching starts from Standard III (age 7+) in all schools in Tamil Nadu. There are 36,000 primary schools and 3,000 secondary schools.

General Curriculum in Standards I-X

In the re-organised educational pattern it has become obligatory on the part of the government to give general education to every child in standards I—X. Every child should get a general education to include languages (Regional language or Mother Tongue and English), Science, Mathematics, History and Geography, Physical Education and Moral Instruction.

The regional language has been the main medium of instruction. But much consideration has also been given to minority languages and we have schools with Urdu, Malayalam, Telugu, Hindi, Gujarati as their media of instruction.

The New Ten-Year syllabi have been introduced in phases in Tamil Nadu from 1972 with class I, and class X in 1977. The new curriculum of 10+2+3 proposed to be introduced in Tamil Nadu from June 1978, brings about a major change in education to cater to the needs and aspirations of the people of India. The new pattern would present a golden opportunity for correcting the deficiencies of the previous outmoded and irrelevant system of education.

Objectives of the new pattern of education

1. To follow the national uniform policy as recommended by Kothari Commission so that easy mobility of students from one State to another will be made possible.
2. To link education with productivity.
3. To minimise the pressure of admission in colleges.
4. To decentralise higher education.
5. To raise the standard of education by introducing a curriculum aiming at the national goals.

Curriculum

Several committees were constituted to decide upon the nature of the syllabus, the scheme of examination and vocational subjects. The syllabi under different parts were published for detailed study and constructive suggestions by educationists, teachers, associations and the public. The comments received were considered by the respective committees before finalisation of the syllabi.

Courses of study in the higher secondary stage

Part I—Tamil or mother tongue or a classical language or any foreign language other than English.
Part II—English.
Part III—Optionals—Science and Humanities.

Vocationalisation in the +2 stage

The special feature is that the managements of the institutions are given freedom to choose the vocational options in relation to the needs of the locality especially with regard to self-employment opportunities. 52 vocational options have been identified under 6 major occupational areas. A student selecting vocational option under any one of the 6 occupational areas will do Tamil or Mother Tongue, English and one academic subject under Group A, Part III in addition to vocational option.

Major occupational areas

Agriculture, Home Science, Commerce and Business, Health, and Engineering and Technology. Other areas include Tourist Guide, Photography, Music,

Textbooks

Committees of experts have been formed for writing and reviewing textbooks. About 150 authors and reviewers have been appointed. The Tamil Nadu Textbook Society, a society registered under the Societies Registration Act has been required to bring out textbooks for 43 titles. For other languages and subjects the books already available will be prescribed. Even for classes I to X books have been nationalised.

Medium of Instruction

Tamil shall be the medium of instruction for Higher Secondary schools in both XI and IX standards. Students who opt for English medium may do so on payment of tuition fees to be prescribed.

Implications of the new pattern

1. Redeployment of staff.
2. Location of accommodation in higher secondary schools.
3. Science equipment.
4. Selection of vocational courses and surveys.

Impact of the new pattern of education

1. Distribution of students to different walks of life.
2. Reduction of unemployment.
3. Improvement of standards.
4. Job-satisfaction for teachers.
5. Streamlining—The uniform pattern of new education in all the states will facilitate better implementation of educational programmes, large scale production of books and reading materials, training of teachers, reconstruction of syllabus and improvement in examination at a national level.
6. Promotion of national integration.
7. Better prospects—The new pattern will mean better teacher, better facilities and better standards in schools and colleges.
8. Strengthening national unity.

It is hoped that Tamil Nadu with the enlightened co-operation of parents, teachers, students and inspecting officers, will succeed in this significant educational reform.

Innovative programmes in the curriculum in Tamil Nadu

I. *Work-experience*

"No man is born in the world whose work is not born with him".

Work experience has been introduced from standard VI to X in the high schools of Tamil Nadu. The SCERT Tamil Nadu, conducted a six-day workshop to frame model syllabi on work-experience activities and their combined effort has produced the syllabi for eighteen areas of work.

II. *Introduction of Book Banks in Schools*

Tamil Nadu has been a pioneer in starting many innovative projects to be of service to the socially and economically weaker sections of the society of which book banks are neither the last nor least. The banks from which the pupils can take the textbooks free for use, afford great relief to the poor families. Establishment of book banks in addition to free education has encouraged the weaker sections to educate their children. Therefore it can be said that these banks are in furtherance of the directive principles which our great leaders have put before us. From the following statement it could be seen that so far 2,883 book banks in high schools and 30,847 book banks in elementary and middle schools have been opened. 9,99,650 books in high schools and 23,67,812 books in elementary and middle schools have been collected and the value of the books is Rs. 76,87,299 and the beneficiaries are 9,93,971 pupils.

The government of Tamil Nadu has sanctioned Rs. 5 lakhs worth of textbooks for book banks from the Tamil Nadu Textbook Society.

III. *Adoption of Villages*

Every high school has adopted a village and it caters to their needs in respect of health and hygiene, sanitation, adult literacy, women's education, etc.

IV. *Orientation Courses*

Orientation Courses have been conducted by SCERT and the Directorate of School Education, in English, Modern Mathematics and Science from Stds. VI to X. To handle the upgraded syllabus of the higher secondary stage it has been proposed to give orientation training especially in Mathematics and science subjects to the senior working teachers.

V. (a) *Educational Broadcasts*

Educational broadcasts are being conducted for the benefit of pupils from Stds. VI to X for the qualitative improvement in education.

(b) *Use of Mass Media*

Broadcasts for the +2 stage to mobilize public opinion in favour of this useful reform will be conducted during this summer.

VI. *Preparation of Guidebooks*

Teachers guide-books have been prepared in English, Science and Mathematics for effective teaching.

VII. *Evaluation and Examination*

Std. VI to X--There is a public examination at the end of X standard. There is a common examination at the end of the VIII standard at the district level.

In many schools the internal assessment scheme has been introduced to assess the development of the individual and it is being carried out consciously and systematically.

A separate unit for examination reform has been constituted in SCERT. Workshops have been conducted regarding examination reforms and question banks have been formulated.

The most striking feature in examination reform is the introduction of the compartmental system of examination. A pupil who passes through compartmental system has been given the privilege to pursue higher studies. Central valuation system has been introduced and the results are announced in time and with accuracy.

VIII. *Introduction of Panel Inspection*

Tamil Nadu has realised the merits of panel inspection which helps in the qualitative improvement of education.

IX. *Parent Teachers' Association*

This Association forms an integral part of the curriculum. It caters to the needs of the school curriculum physically and academically. There is a centralised body at the state level.

X. *Scholarships to Scheduled Castes and Scheduled Tribes Students*

Scheduled Caste and Scheduled Tribe pupils who secure more than 300 marks are each given a scholarship of Rs. 300/- to enable them to meet their basic needs while they seek admission in the College.

XI. *School-complex and College-complex*

To cater to the needs of the elementary schools they are attached to a nearby high school. Similarly to cater to the needs of the rural areas, village high schools are likely to be attached to nearby colleges. The main objective is to raise the standard of elementary and higher secondary students.

The objective of the scheme is better education, and qualitative improvement in the teaching-learning process.

A brief note on the activities in the area of non-formal education in Tamil Nadu

The SCERT was the first to initiate activities in this direction. The SCERT, Tamil Nadu has launched a programme of Rural Development through Non-formal Education from 1976 under a Package Plan.

Under this package plan, several programmes, like workshops, seminars have been conducted through which over 600 teachers and 350 villages have been provided with necessary training to realise the objectives. A work-oriented literacy centre has been opened on an experimental basis at Anakaputhur, an adopted village and special source materials have been prepared through workshops to cater to the needs of these villages. A similar project has also been launched for women at Peerkankaranai, another adopted village. The plan is under operation with the cooperation of several departments like Rural Development Department, Co-operation Department. Agriculture Department, Regional Directorate of Workers Education, Khadi and Village Industries Board, Palmgur Federation, Health Department, etc.

Developmental activities in community education and participation project (DACEP)

The project was inaugurated in December 1977 and introduced in the following two villages (i) Tirur in Chingleput District, and (ii) Amoor in North Arcot District. The objective of this experimental project is to develop educational activities with the aim of providing education as a stimulation to the community through school. Pre-school and out-of-school programmes were organised. The school and the teacher were made catalytic agents for social change.

The special feature of this programme is that the authors of the instructional materials have actually visited the places and collected first-hand information with regard to the needs of the locality.

Directorate of non-formal education

The Directorate of non-formal education of the Education Department of Tamil Nadu is implementing the Farmer's Education and Functional Literacy Programme in 630 centres. The above programme is designed to disseminate knowledge as innovative practices in agriculture through the literacy programme. There are 600 non-formal education centres for the age-group 15-25 and 374 non-formal centres for the age-group 6-14. The proposal is to start from 1978, 200 more non-formal education centres for the age group 15-25 and 374 more centres for the age group 6-14, so that by the end of 1978 there will be 2178 non-formal education centres.

The All India Radio in Tamil Nadu and more particularly AIR Trichy are giving active support to the non-formal education programmes. Four classes a week are being broadcast. There are also T.V. programmes on non-formal education.

It is hoped that with the effective co-operation of the various agencies which have dedicated themselves to this task of non-formal education, the Tamil Nadu government will be able to wipe out illiteracy in the target period,

Curriculum Development and its use in Tripura at the Primary Stage (Classes) I-V

J. C. Dutta

Background

Tripura was obscure in the educational map of India during the princely regime. The enrolment at the primary stage was hardly 8%. The position at the secondary stage was equally disappointing. The curriculum of Bengal Presidency was followed both at primary and secondary stages of education because of its historical and cultural ties with Bengal. Tripura had to make a beginning practically from a scratch after its integration with the Indian Union in October, 1949, and through planned activities it is gradually getting into stride with respect to different sectors of education.

Curriculum planning and development (1953-78)

Modest beginning was made in May, 1953 in the direction of curriculum planning and development for the primary stage when a curriculum committee was constituted with a cross-section of teachers, inspectors of schools, educational administrators and a public leader. Its terms of reference were: (1) to examine the existing primary curriculum developed by West Bengal, and (2) to reform or renovate the curriculum to make it responsive and relevant to the needs and aspirations of the people.

Curriculum was conceived as a mere course of studies which included (1) Health Education, (2) Physical Education and Games and Sports, (3) Social and Citizenship Training (4) Creative Activities including sewing, design-making and home decorations for girls, (5) Language, (6) Mathematics, (7) Environmental Studies having components of history, geography and science. The last three were proposed as examination subjects. The primary objective of the curriculum was the all-round development of the child as a member of the society and this objective was proposed to be realised through activised and correlated lessons, democratic participation in work situation and corporate living in schools. It was in fact the mere adaptation of the primary school curriculum developed by West Bengal. It was cognitive in style.

The second revision of the curriculum was necessitated in 1962 following the adoption of 11-year higher secondary pattern of education in the state. The stage-wise articulation was the prime motivating force. The objective of the curriculum as one could see was to achieve all-round development of the child as a useful member of the society. In order to realise the objective, the course of studies was designed in two parts (a) curricular, and (b) co-curricular. The curricular contents constituted (1) Health and Physical Education, (2) Social Studies, (3) Craft and Creative Activies, (4) Language (Bengali), (5) Mathematics, (6) Natural Science, (7) Drawing and Art, (8) English (from class IV), and (9) Hindi (from V). The co-curricular activities included (1) Games and Sports, (2) Celebrations/Drama, (3) Exhibition, (4) Literary Forum, (5) Assembly and Prayer, and (6) Social Service. Stress was laid upon good habits and right social attitudes and behavioural change through co-curricular activities. Playway/Activity/Project method was recommended for subject teaching as far as practicable.

In fact, this was the first curriculum planned and developed by the State Education Department. A Textbook Advisory Committee was appointed by the Education Department to plan and develop the curriculum for the primary stage. The Committe was divided into a number of sub-committees on which were represented the best available experts in the fields The sub-committees after a number of sittings, prepared the final draft and placed it before the committee. In a joint meeting the final draft was approved with some modification. The curriculum was no doubt designed on modern lines. But textbooks practically became the be-all and end-all of the curriculum at the implementation stage.

The third revision of the curriculum was made in 1964. This was marked with omission of Hindi from and addition of Music to the course of studies. The Science content was thoroughly modified and enriched. Some notes were included in the document as to how the curriculum would be implemented.

The fourth revision was done in 1969. Science and Social Studies contents were modified on the line of the syllabusses developed by the N.C.E.R.T. While the primary objectives of the curriculum being the same as in the earlier curriculum documents, the subject-wise objectives were formulated for each of the five classes so that expected results could be evaluated. As an implementation strategy, the curriculum document was designed as a teachers' guide which combined stage-wise content, method and approaches for teaching the content and general and specific instructions for the organisation of the curriculum. The study of the curriculum was made compulsory, for the in-service training of the teachers.

In the fifth revision done in 1974 there was hardly any major change except in language areas (Bengali and English). The teaching of gramma was accepted for classes IV and V. Besides, the broad objectives of primar education were conceived so as to prepare the child for individual an social adequacy which included competencies like (a) communication (b) safety, (c) work occupational, (d) creational and recreational (e) learning and evaluation, (f) behavioural competency, (g) citizenshi and (h) moral competency. The teachers were given freedom to experi ment with innovative ideas and practices within the broad framework o the curriculum.

The sixth revision has been done this year. Important changes have been brought about in the subject areas of mathematics, science and social studies. The old course content of mathematics has been proposed to be replaced by new mathematics.

Changes are proposed in social studies and science, particularly in their treatment. On the basis of the pilot study conducted for three years the science content has been further enriched. New instructional strategy in science teaching has also been proposed.

The implementation of curriculum in the single-teacher schools, which number about 50% of the total primary schools in the state will pose a formidable problem. Much thought has been given on multiple-class teaching and organisational strategy. The curriculum document contains detailed instructions on these two aspects.

The state curriculum for the primary stage has undergone regeneration through the continuous process of planning and development. The curriculum renewal has become a routine feature in the state. It is put to serious review after every 3-4 years whether this is necessitated to make content more in line with new knowledge and methods in that discipline or is demanded by educational policies. But the rationale for revision is often pedagogical rather than social in purport.

Some related problems and issues

The primary curriculum as emerged through the process of renewal may be thought of as a mere course of studies, synonomous with the syllabus. But it is also conceived as a sequence of learning experiences to realise the general objective of education as well as to achieve instructional objectives which prevents it from degenerating into a mere catalogue of course content. Yet the curriculum is narrowly conceived in the sense that the source of inspiration in curriculum development is not social but merely cognitive in style and application.

Promotional agency for the curriculum development

The promotional agency in formulating the curriculum is the state Textbook Advisory Committee. It is an adhoc body, representing a wide cross-section of people including teachers, headmasters, educational administrators, subject specialists from colleges and post-graduate centres, methodologists from teachers' training colleges and S.I.E., representatives from the Board, teachers' association, and private schools. The composition of the committee has gradually been broad-based through the passage of time. The committee is in fact a part of the government administrative machinery, yet its rules and functions are advisory rather than executive. It is concerned with planning and recommending the operational plan for the curriculum to be implemented in the school system. It has also power to appoint subject committee(s) to review specific subject(s). It is felt that there should be a whole-time promotional organisation behind it to process things for the committee. At present the promotional functions are carried out by the SIE and Teachers' Training Colleges/Bureau of Educational and Vocational Guidance.

Try-out and experimentation

Before a curriculum innovation is incorporated into the curriculum such as new mathematics and new instructional strategy in science teaching, try-outs are generally conducted on a micro basis to tests its efficiency and effectiveness. Limited trials are followed by more extensive trials before an innovation is considered for state-wide implementation. But this is not always the case as it should have been.

Strategies of implementation

In spite of increasing consciousness of the need to improve the implementation strategies, the process of curriculum-planning, development and implementation as an integral process has yet to be seriously recognised in the state.

In the state of Tripura the orientation programmes for implementation include (i) exposure of the curriculum to the teachers and supervisors before the implementation is effected, (ii) the compulsory study of the curriculum in the in-service teacher's training course, (iii) revision of the teachers' training course where necessary, (iv) preparation of teacher-guides and source-books and, (v) short orientation training. In fact, the curriculum plan is written out to serve as a dependable guidebook for the teachers.

At present teachers are involved mainly at the implementation stage. Our experiences show that participation of teachers in try-out and experimentation stage gives them a sense of involvement which needs to be encouraged in other stages too, as far as practicable.

Separate curriculum for urban and rural area

Nearly 89% of the population lives in villages, which includes a considerable segment of tribal population. However ideal it may sound to develop a separate curriculum for the urban and rural areas, it will be extremely difficult to think in terms of differentiated curriculum which may at present mean curriculum discrimination to the politically sensitized rural people of the state. The development of alternative curriculum for the urban and rural people on a common core of concept, understanding and skill components may be one of the possible approaches to the problem.

Feedback for the curriculum renewal

More often than not curriculum renewal is done without necessary feedback through evaluation. Except in the area of science and partly in mathematics this is the weakest point in the curriculum-change process. Evaluation has yet to form a functional part of curriculum renewal in the state.

Curriculum for non-formal target group

In Tripura non-formal centres operating at the primary level follow the curriculum of its formal counter-part in the absence of any curriculum plan suited to the specific needs of these centres. This is the area that remains outside the scope and jurisdiction of the formal curriculum-framing body. This dichotomy needs to be broken down and there should be one unified promotional organisation to convince the people that non-formal education is not second-rate education for the second-class citizen but it is education imparted through a different circuit.

Textbook preparation

Good textbooks written in the spirit and the approach the curriculum developers emphasise are the supportive factors for better implementation. The nationalised text-books can play a key role in this area. But the state enterprise in the field of nationalisation of textbooks is very limited and needs to be boosted up.

Co-ordination

In the field of curriculum planning and development at the primary stage three promotional units, namely, Non-formal Unit, Tribal Language Cell, and the Textbook Advisory Committee work independently within the broad framework of the education system. It is felt that the co-ordination now only at the decision-making level should be brought down to the operational level for better mobilisation and pooling of existing resources—and also for work efficiency.

Curriculum Development and its uses in Tripura at the Secondary and Higher Secondary Stages

Askit Kumar Bhattacharya

Background

Ours is a small State with a population of barely 16 lakhs. Tripura was a princely state in pre-independent era. It merged with the Indian Union in 1949.

The educational effort during Maharaja's time was of a limited nature. On the eve of independence there were 9 high schools including one for girls and enrolment coverage was about 3%. At present there are 107 High Schools and 29 Higher Secondary Schools and enrolment average is over 43%.

There was no Education Directoratie as such and the Inspectors of Schools who looked after the education of the princely state were attached to the Secretariat Department of Education. The Education Directorate came into being in April 1953.

The Schools of the princely state were under the Calcutta University; so the curriculum was identical to that of West Bengal. The examination was conducted by the same body.

The West Bengal Board of Secondary Education started functioning from 1953 and the schools of our State remained affiliated to that Board till 1975, when the State had its own Board of Secondary Education. The curriculum of West Bengal is still being followed in our state. It is expected that the Tripura Board may have its own curriculum in the near future for which necessary steps are being taken.

Curriculum renewal

The curriculum prepared by the Calcutta Univerity was followed in Tripura till 1956, with minor changes in the course of studies brought about by the West Bengal Board of Secondary Education after its establishment.

In 1957, two different courses were simultaneously introduced in our State for two types of schools i.e., Secondary and Higher Secondary and the curriculum prepared by the West Bengal Board of Secondary Education in pursuance of the recommendations of Mudaliar Commission was followed.

Keeping in view the social, economic, political and technological changes that took place during post-independence days, the curriculum was revised. But the core subjects such as Science and Mathematics for which there was no public examination were neglected by both the teachers and the students in the Higher Secondary stage. As a result the students passing the Higher Secondary examination in other than Science and Technology stream hardly possessed the fundamental knowledge of those subjects. This curriculum could not ensure better employment opportunities for the learners.

In keeping with ths National Policy of Education based on the recommendations of Indian Education Commission 1964-66, the curriculum was again revised by the West Bengal Board of Secondary Education in 1974 and the curriculum of 10 + 2 pattern has been implemented in our State since 1976. The previous syllabi of different subjects have been radically changed. Teaching-learning strategies and innovative approaches were taken into consideration in reframing the curriculum. Academic and vocational aspects of education have been integrated in the general school system. It seeks to equip the students with a good general education together with a basic familiarity with one or more vocational opportunities available to them.

+ 2 stage

Highes Secondary courses came into effect from July 1976. The scheme of studies at the Higher Secondary stage has been envisaged for two streams, namely, General Stream and Vocational Stream.

The general stream curriculum consists of:

(i) two languages: mother tongue and English
(ii) Elective subjects : three
(iii) One of the following activities as co-curricular programme · Work Education, Physical Education, Social and Community Services, N.C.C.
(iv) Optional Elective Subject:
  (a) Ordinary level course : the subject has not been offered by the pupil under elective sector.
  (b) Advanced level course : The pupil has once offered the subject in elective sector, and has again offered the same subject for in-depth and extended study.

Work-experience in secondary stage and vocational stream courses in + 2 stage

Work Experience as conceived in our State is not isolated work but a project-based unit of work. Vocational courses have not yet been introduced at the +2 stage.

Secondly, the vocational courses were designed by the West Bengal Council of Higher Secondary Education. Unless a substantial change is brought about in the course, it will be well-nigh impossible for the state to introduce it.

Agency for the construction of curriculum

The West Bengal Board of Secondary Education and Higher Secondary Council have curriculum committees representing a wide cross-section of people including teachers, headmasters, subject experts, curriculum planners and representatives from Teachers' Associations, Department of Education, Agriculture, Industry and Health. The Committee has the power to appoint Subject Committees to review subjects or formulate course content.

Implementation

1. The curriculum was introduced in our state without experimentation.
2. New Mathematics has been introduced from classes VI to VIII. S.I.E. in collaboration with the staff and members of the Mathematics Department of the University Centre of our State, prepared a working paper for the teachers and conducted a few courses to familiarise them with the new trends and to make teaching of the subject more effective.
3. Science stream in +2 stage was introduced only in those schools where adequately qualified teachers and laboratories and other facilities were available and the number of such schools is 12.

4. *Examination reform*

   The Tripura Board of Secondary Examination conducts both Secondary and Higher Secondary Examinations. A workshop on examination reform was organised by the SIE in collaboration with the Board. In that workshop it was decided to sub-divide each concept into a number of modules. The nature and number of questions to be set from each module and the weightage to be given to each question was also suggested in that workshop. To test the knowledge, skill, application and appreciation ability of the students it was also decided that objective type, short answer type and essay type questions should be set and adequate weightage should be given to each.

Promotional agencies

The Board of Secondary Education and a part of government administrative machinery like SIE act as the promotional agency for the planning, development and implementation of the curriculum.

Problems and issues

1. Frequent changes in education pattern have made both parents and teachers feel frustrated. They are silent spectators in the field.
2. The non-availability of standard text-books in regional language, i.e., Bengali, the inadequacy of equipment and other facilities, inability to divert adequate funds for implementation of the new curriculum are serious constraints.
3. Inter-disciplinary approach as in the case of Physical Sciences comprising Physics, Chemistry, Life Science, consisting of Botany, Zoology and Human Physiology; India and her people including History, broad features of Indian Constitution and combination of varied subjects into an incoherent whole makes the learning situation more complicated.
4. The lack of communication and rapport between the curriculum planners, developers and implementing authorities is a major problem for revising the curriculum to suit our needs.

Impact

(a) Public criticism has been voiced largely through letters to the editors.

(b) Attitudinal and behavioural changes will take time to occur and the success of the new curriculum is difficult to assess at the moment.

Changes in the School Curriculum in U.P. During the Period 1968-78 with Special Reference to Physics Syllabus

N. S. Sharma

Background

In Uttar Pradesh the responsibility of formulating the curriculum for secondary stage is vested in the Board of High School & Intermediate Education. The Board acts as a central coordinating body for developing and modifying the curriculum. The modifications are brought about with the help of experts in various subject areas working in the universities, colleges, teacher education institutions, special institutes and so on. However, the curriculum approved and prescribed by the Board is more or less an examination syllabus, which has not much to indicate by way of teaching methods, materials and concomitant activities. Thus at present the curriculum and syllabus are geared to the examinations. Curriculum development being continuous process, the U.P. Board has been bringing about necessary changes in the curriculum from time to time. Major changes have been effected thrice during the preceding ten years period. An overview of these efforts towards curriculum development would be worthwhile.

Objectives

This case study has been undertaken:

(i) to study the major changes in the High School and Intermediate curricula of Physics and to analyse their significant features;

(ii) to assess the strengths and weaknesses of the modifications in the above curricula;

(iii) to thrash out issues for future strategy.

Special features

The change in the school curriculum during the last ten years has been a phased programme. The first phase started in 1968. All the subjects were taken up for the improvement of the content with special stress on Science and Mathematics at both the levels i.e., High School and Intermediate. Curriculum development in U.P. has concentrated on the secondary level. Significant changes at the secondary level are however unlikely to be effective, if children leave the primary stage after being taught in ill-equipped schools. Steps have also been taken for improvement at the primary stage. It will not be out of place to have a casual look at the pattern of the education prevalent in the State. Classes I to V are termed as the Primary classes. The classes after five i.e. VI through VIII form the Junior High School stage. High School classes include classes IX and X. In Uttar Pradesh after High School we have Intermediate classes. The Intermediate stage comprises classes XI & XII. After passing the Intermediate examination a student can graduate in two years.

The Board of High School and Intermediate Education provides a large variety of subjects under different groups to a candidate for both the examinations. Some of the groups for both the stages are Literary group, Scientific group, Commerce group, Constructive group and Agriculture group. Apart from these groups, separate provision has been made for High School Technical and Intermediate Technical examinations. Science has not been made a compulsory subject in High School but those who offer Science under Scientific group must offer Mathematics. The candidates for other groups have General Mathematics as a compulsory subject. The other compulsory subject for High School is Hindi for all the groups. Girls have been given a choice to offer Home-Science instead of General Mathematics. Hindi literature is compulsory for all the groups of Intermediate excepting Scientific group and Commerce group. These two groups have to offer General Hindi as a compulsory subject.

It is not possible here to enumerate the changes made in all the subjects of the High School and Intermediate classes. The case study is therefore limited to appraising curricular changes in Physics at both the levels of secondary stage.

The change in the first phase mainly consisted in the addition of appreciable amount of course content at each level. Certain topics which were previously prescribed at the Intermadiate level were pushed down to High School level e.g. hygrometers, internal combustion engine, moving coil galvanometer and cathode rays, to mention some of them. The introduction of objective type questions as a part of the examination paper in High School Science was done with a view to making it essential for the students to cover the entire syllabus. The practice (objective-type qustions) was discontinued in the final phase of the change and very short-answer questions introduced instead. Apart from increased course content provision was also made for a practical examination in Science, whereas, there was no such practical examination in High School classes previously.

As regards the change in Inter classes, here too the content of the syllabus was appreciably enhanced. Modern topics such as Artificial Satellites, Escape Velocity, Jet Propulsion, A.C. Circuits, Cyclotron, Nuclear Reactor, etc. were incorporated in the syllabus. These topics previously found a place in university degree courses. The introduction of these topics was fully justified in view of the dramatic expansion of knowledge—generally termed by the modern prophets as 'the explosion of knowledge'. To prevent the syllabus from becoming cumbersome a number of topics lying as deadwood were excluded. Practical work to be performed by the students was also increased.

The second phase in planning the curriculum was undertaken in 1974. The changes purported to lay emphasis on the basic concepts of Physics and many descriptive topics were done away with. It was aimed that the students should grasp the fundamentals rather than commit certain details to memory. It was thus a qualitative change. Further, the broad outlines of the syllabus were divided and subdivided laying down elaborate details of the items to be studied. This considerably helped the teacher as well as the text-book writer. The writing of books covering the new syllabus was left to the private agencies.

The final phase of the programme was accomplished in 1976. Basically the form of the syllabus remained unchanged. Certain descriptive topics were further dropped. Previously in measurements and calculations all the three prevalent systems i.e., C.G.S, F.P S. and M.K.S. were utilised. As a change the M.K S. system alone was retained for all physical units in both the stages. Another change for the Inter classes was in the form of redistribution of topics paperwise. It resulted in a better organisation of concepts in the curriculum area.

Foregoing discussion warrants the conclusion that this curriculum development programme brouhgt about improvement in two significant directions.

(i) towards modernization of curriculum

(ii) towards stress on conceptual learing and creative problem-solving, rather than on rate memorisation.

It is essential here to mention the changes in Science subjects under the renewal of the curriculum. All the science subjects of both the stages including Mathematics have undergone similar changes both in respect of quality and quantity and all the aspects of the implementation were fulfilled with the same urgency, determination and hard work.

Implementation

Merely the renewal of the curriculum as discussed earlier could be of no avail. The following points clamoured for attention of teachers, administrators and guardians;

(i) the reorientation of teachers in the state;
(ii) preparation of teacher-guides;
(iii) the change in the technique of evaluation.

In these tasks senior school teachers and university staff contributed their time and effort. Summer Institutes and Workshops for Physics teachers were organised. A crash programme was launched in the State to reorient all the High School science teachers through State and district-level workshops. The salient points of the revised syllabus were prepared and distributed for the guidance of subject teachers. Most of the teachers made good use of these in keeping themselves upto-date.

The curriculum is closely associated with the mode of evaluation. Consequently test items directed towards the evaluation of wider objectives began to appear in examination papers from 1976 onwards The questions requiring very long or essay type answers were found to be inadequate. The curriculum reform group was guided by modern developments in the techniques of evaluation. Subsequently teachers were trained in devising new types of questions involving the assessment of 'Knowledge', 'Understanding', 'Application' and 'Skill'. Model test papers were prepared and supplied to the institutions in the State. Several workshops were organised in cooperation with N.C.E.R.T. for achieving this end.

It is worthy of note that at every step the curriculum changes were brought into force simultaneously in all the institutions of the state, and the formidable task of reorienting teachers was successfully accomplished.

Impact

The task of adapting the curriculum to the complex and changing needs of the community is not simple. Moreover, owing to the increasing popular demand for more schools, the scanty resources have got to be spent on increasing the quantity of education, rather than on improving quality, while the urge to pass the examinations is stronger than the desire to grasp the concepts properly. Under such retarding factors spectacular improvements can hardly be expected.

Though the new syllabus was introduced simultaneously throughout the state it cannot be justifiably assumed that the rate of diffusion of the new trend is uniform in all the institutions. As a matter of fact, it is not easy to assess what is actually going on in thousands of class rooms. This much can however be asserted that the majority of the teachers are taking interest and pains to improve the quality of Science education as envisaged in the new syllabus.

The number of students offering Science subjects has been on the decrease for the last five years or so. Previously there used to be a reckless craze for the Science subjects. It has been observed that this enthusiasm is now declining. This phenomenon poses a question whether the modernization of the curriculum has dampened the craze with the result that students with genuine interest and talent alone are opting for Science.

It is generally felt that the modified curriculum has been instrumental in raising the standards of Science education, while the introduction of the new type of questions has made evaluation relatively more objective and effective. However, it is premature to make any categorical statement in this regard.

Problems & issues

Certain issues are worth considering in the context of future strategy for curriculum development:

(i) At present the task of developing curriculum is mainly concentrated in the hands of specialists Curriculum should cease to be a job for specialists alone. The initiative of class-room teachers is to be sought for their creative involvement. Curriculum renewal movement should be a popular one involving teachers, administrators, parents, and community as a whole.

(ii) Education for rural life and agricultural development is essential in our country. Theorists may talk about introducing children to the computer-age but the ultimate fact remains that good eduation is to be provided to undernourished children through schools accommodated in poor buildings and huts devoid of equipment, books and teaching materials If we canot take up this challenge the curriculum planning may be termed as a superfluous luxury at the most.

Curriculum Development in the Union Territory of Chandigarh

K. B. Maini

The Union Territory of Chandigarh came into being on 1st November, 1966 as a consequence of the partition of Punjab on linguistic basis. Hilly areas contiguous to Himachal Pradesh were merged with that State. Hindi-speaking areas were given the new name of Haryana Pradesh and Punjabi-speaking territory retained its old name i.e., Punjab Pradesh. Dispute arose over the capital, Chandigarh, the administration of which was taken over by Union Government pending further decision. The boundaries of Chandigarh are within the radius of 8 Kms.

Curriculum

At the time of the formation of the Union Territory of Chandigarh, the curriculum upto middle stage i.e. 8th class, was inherited from Punjab. In High and Higher Secondary School the curriculum for IX, X and XI classes prescribed by the Central Board of Secondary Education, New Delhi was adopted.

There are all types of schools in Chandigarh, namely, primary, middle, high, higher secondary, urban, rural, boys, girls, co-educational, government as well as privately-managed recognised schools. All these categories of schools have to follow the prescribed curriculum. Another category of schools is that of Convent Schools which, however, follow their own curriculum as prescribed by their respective parent bodies.

Later on in 1972, non-graded system was introduced in Standard I of all the non-model Government schools of Chandigarh after successful experimentation in two schools as a pilot project. After that, every year, this system was extended to the next year (class) and now there is non-graded system upto Primary stage in all the non-model schools of Chandigarh. Last year this system was introduced in privately-managed recognised schools, too. Regarding the subjects taught in Primary Schools i.e. upto 5th standard these are as follows :—

Two languages i.e. Hindi and Punjabi, Mathematics, General Science and Social Studies. Each child opts for Hindi or Punjabi as the first language in I standard and then has to study the other language as Second language in IV standard. From this year, it has been planned to start English also from the third standard to reduce the rush in model schools as the parents have got a craze for their children to study English also.

Ordinarily no detention of children is allowed upto V standard and they are allowed to study at their own pace in the schools under non-graded system.

Many pre-primary schools have been opened, even in rural areas, by the Education department of Chandigarh administration to reduce wastage and stagnation. This has been done to develop among the children the habit of attending the school Administration is trying to make the schools as attractive for the children as possible.

Text-books at the primary stage are the same as in Punjab.

Regarding the middle stage, the curriculum in the beginning was the same as in Punjab. Later on Modern Mathematics was introduced from the VI standard when plus two system was introduced in Chandigarh. This was done to enable the students to comprehend the prescribed syllabus of new mathematics in the IX standard under +2 system. Similarly some changes were introduced in the Syllabi of Science subjects also to familiarise the students with the contents which they were to study in the IX class onwards.

For IX, X and XI classes, curriculum was as prescribed by the Central Board of Secondary Education, New Delhi. So with the introduction of +2 system in Chandigarh, the whole curriculum was changed accordingly.

But from this year 1978-79, the Chandigarh Administration has decided to revert to the old Higher Secondary i.e., upto XI class. This has been done keeping in view the difficulties experienced by the students whose parents are transferred to and from Chandigarh from and to their respective states of Punjab and Haryana where +2 system has not been introduced.

Now the latest position is that in classes IX and X, the curriculum is based on plus two system. In XI class, it is the same as prescribed by the Punjab University for the pre-university class of the colleges affiliated to it.

Evaluation

There is no detention at primary stage i.e. upto 5th class.

A public examination is conducted by the Education Department of Chandigarh Adminisrtration for VIII class.

But students of the government model schools have been exempted from this external examination. However, it is under the active consideration of the Department to abolish this exemption.

Class X examination of all the schools is conducted by the Central

Board of Secondary Education, New Delhi.

For class XI examination for the year 1979, decision is yet to be taken by the Administration.

Objectives

(i) Universalization of primary education.
(ii) Cent-per-cent literacy.
(iii) All-round development of the personality of the child.

Salient features of the curriculum in Chandigarh

(i) Non-graded system upto 5th standard.
(ii) Regular orientation courses for all the teachers of primary schools by State Institute of Education, Chandigarh.
(iii) On-the-spot guidance and follow-up progiamme by SIE.
(iv) Mid-day meals and milk supply scheme in primary schools as incentives for the retention of children in the schools.
(v) Supply of Science Kits to all the primary schools and regular visits of the members of Science Department of the S.I.E. to all the primary schools of Chandigarh. This has been done to improve the teaching of Science at the primary stage.
(vi) Book-banks in schools and supply of free books and uniform to deserving students.
(vii) School Improvement Projects in each and every school under the guidance of the academic staff of the S.I.E., Chandigarh.
(viii) Inter-school competitions on various items like 'On-the-Spot Drawing', 'Calligraphy', 'Recitation of Poems' and 'Science Exhibitions', etc. The special feature of this item is that the prizes are awarded on the basis of achievement among the same category of the schools. In other words, competition among rural schools, urban model and non-model schools are held separately and prizes are awarded accordingly. This has been done to encourage all categories of schools and to avoid domination of model schools over other schools in such competitions.
(ix) Nationalised textbooks upto X class.
(x) Institutional Planning by every School.
(xi) School-Complex Centres.
(xii) Double-shift Schools to accelerate the process of universalization of primary education.
(xiii) Mobile Library for Primary Schools. Books are supplied by the S.I.E. to rotate in all the Primary schools to develop reading habits among the children.
(xiv) Supply of model test papers prepared by the staff of the S.I.E. covering almost whole of the prescribed syllabus, to the schools

as well as to the paper-setters.

(xv) Research studies (of functional nature) on educational topics by the research department of the S.I.E.

(xvi) Publications of the S.I E. particularly for primary schools.

(xvii) Adult Education Centres and own-time classes.

(xviii) Continuous Education Centre to keep the teachers of High/Higher Secondary Schools of Chandigarh abreast of the latest development in their respective fields of education.

(xix) Faculty Associations in various School subjects to improve professional efficiency of teachers.

(xx) Parent-teacher Association in every school and a central body of Parent-teacher Associations of all the schools of Chandigarh to associate the community in the improvement of the school.

Curriculum Development in the Union Territory of Goa, Daman and Diu

Vijay Kumar Patnekar

Goa, Daman and Diu are three different localities situated at three different places, having a single administrative machinery. This Union Territory came into existence on 19th December, 1961. The percentage of literacy is about 74%. The regional languages are Konkani and Marathi and the official languages are Marathi and English.

Educational development

Before liberation there was no Board nor any examination-conducting body. Hence, for S.S.C. examination, pupils used to go to Belgaum, Kolhapur, or Bombay. Students were free to choose either Marathi or English as medium of instruction. There were no colleges in those days.

After the liberation, between 1961 and 1973, the government of Goa, Daman and Diu gave more stress on education in general and on primary education in particular. The educational pattern of Maharashtra was adopted, including the content matter. Tha medium of instruction in most of the Primary Schools is Marathi. About 10% of the Primary schools have English as the medium of instruction

Besides curricular subjects, facilities for learning Music, Art and Craft, Physical Education and Dramatics were also provided to the pupils. There were regular examinations for every standard.

Pre-primary education

Recently a seminar for pre-school teachers and administrators was organised by the S.I.E., in which the problems of Pre-primary education in the territory were discussed. Curriculum for ths Pre-primary stage will be formulated soon.

Primary education since 1973

In June 1973, the ungraded system of education was introduced in class I. The syllabus of primary education from Maharashtra was reviewed and adopted. Teaching-learning units, learning-aids, drill materials were prepared in a series of workshops For this, the A.D.E.I.s and headmasters of primary schools were trained. The S.I.E. is organising various in-service courses to train the teachers for operating the ungraded system of education.

A new curriculum based on the NCERT pattern with certain modifitions to meet the needs of the locality has been prepared, which is expected to be implemented from 1982. The policy of the government is that there will be no detentions till class VII from 1979. There is co-education in almost all primary schools

Secondary education

Secondary Education in Goa, Daman and Diu is mostly managed by private institutions, most of which have classes from 5 to 10. About 10% of these schools have Primary section also. The medium of instruction in most of the High schools is English. There are a few which impart education through Marathi.

The 10+2+3 pattern is followed throughout the territory from 1973 The Curriculum and text-books from class VIII are the same as those in Maharashtra.

The S.S.C. examination results of the last three years showed that the percentage of failure in Hindi is higher than in any other subject. This problem was discussed and remedial measures were suggested.

Evaluation system

There are 4 unit tests, 2 semester examinations from classes VI to X. Oral tests are also conducted in languages and Social Science. Each taluka is having an Examination Cell sponsored by the Headmasters' Association and the two Semester Examinations are being conducted by this Cell The Goa S.S C Board conducts the S.S.C. Examination twice a year, in October and March Spot evaluation system was followed. Internal Assessment System was tried but is being discontinued.

Guidance and inspection

Inspection of each and every school is carried out by the office of the Inspector of Schools From the last academic year, the Education Department with the help of the S.I.E. has introduced Panel Inspection. A separate scheme of evaluation based on the NCERT model is being chalked out by the S.I.E.

Higher secondary education

In the +2 stage, there are about 12 independent private Higher Secondary schools linked with High schools, about 6 linked with colleges and others linked with Government High schools. The Board of Secondary and Higher Secondary Education conducts examinations for the +2 stage.

Other educational agencies

Training in Dramatics, Music, Lok Kala and Lok Nritya is being imparted by Kala Academy. The Directorate of Sports and Cultural Affairs provides training and guidance facilities to schools in physical education and co-curricular activities and provides materials, aids, kits for physical education and cultural activities. There is a Food Craft Institute sponsored by the Goa Government which provides training in bakery, confectionary, hotel management and food preservation.

There is also an institution called ACDIL which trains women in pre-primary school education, that is Montessori and Nursery. There is one Secondary Teachers' Training College and three Primary Teachers' Training Colleges. The present position shows that about 80% of the teachers in the High Schools are trained and the same percentage holds good for Primary school teachers.

Educational activities and research

The S.I.E. was established in the year 1975. The basic concern of the S.I.E. is the improvement of curricula, evolution and dissemination of new techniques of teaching and evaluation, production of educational materials and in-service education. The Primary and Secondary teachers are oriented by orientation programmes in most of the school subjects and in Work Experience

The scheme of rural talent search is administered from 1976. These achievement tests are conducted at taluka level and then on zonal level. The best students are awarded scholarships.

Problems and issues

1. The ungraded system introduced in 1973 was met with unfavourable reactions from the teachers.
2. The government has decided to stop English medium in government schools and give scope to Konkani medium schools. The text-books in Konkani are prepared by the local Konkani Bhasha Mandal and is approved by the Board.
3. The government is thinking of omitting Hindi from class III and providing instruction through the mother tongue.

Curriculum Development in Mizoram

Louis Vernal

Background

Mizoram is a mountainous region that lies to the extreme eastern part of the country. It was earlier a district of Assam. In 1972 it became a union territory. Mizoram was considered an excluded area by the Government of India Act 1935 and hence the region has experienced gross neglect on the part of the administration, both British and Indian. However, since 1972 the pace of progress has been fast.

In the field of education, developments have taken place because of the keen interest among the people for education. There is no need of any incentive to make the parents send their children to the school nor is there any difficulty to get the children to the school. This attitude will help a lot in the progress of education and perhaps it is because of this attitude that the literacy rate in Mizoram is placed at 53%. Moreover, the community is very actively involved in the establishment and running of the schools. Teachers are held in very high esteem.

Features

There are separate Primary, Middle and High Schools in Mizoram. However, we do not have any Higher Secondary Schools. The children go to the college for P.U.C. after the High School Examination. Primary schools have classes A,B and I-III, the Middle Schools have classes IV-VI and High Schools have classes VII-X. There are five Colleges, one Teachers' Training Institute and two Undergraduate Teachers' Training Institutes.

The curriculum of the High School was controlled by the Secondary Board of Education, Assam till 1976 when the Mizoram Board of School Education was established. Prior to this date, there was no real agency for looking after the Primary and Middle Schools too. Now the Mizoram Board looks after these two areas also.

Some special features of the curriculum are as follows :

1. There has been an effort to introduce Mathematics and Science from the earlier classes as recommended by the NCERT. For this purpose,

the NCERT books were translated in the local language, Mizo. There is a Science Promotion Officer who looks after Science and Mathematics Education.

2. As far as languages are concerned, the mother tongue and English are taught from earlier stages, the mother tongue from class I and English from class III. Hindi is taught in classes VI-VIII. There are Hindi teachers in each school. The Mizoram Hindi Prachar Samiti runs experimental schools in about 50 centres teaching the basic skills in learning Hindi. These centres are open to all and are run free of cost to the participants.
3. While separate disciplines like History and Geography are taught in earlier classes, Social Studies is taught from class VIII. The possibility of starting Social Studies from earlier classes is being examined carefully by the Board.
4. Drawing and Music are taught from classes I-VI. This is in tune with the tribal character. Folk Music, Folklore and dancing could perhaps find a place in the curriculum.
5. Work Experience is given great emphasis and the main activities are concerned with weaving and wicker-works since the raw materials are abundant.
6. As far as Non-formal education is concerned, there is a State Social Welfare Wing under the Directorate of Education which is engaged in a programme of education for persons of the age group 16-25. This programme is still in its initial stage and there is only one unified course that prepares these persons to reach the level of class IV. Programmes to suit different levels are being initiated. The Primary school teachers voluntary organisations like Young Mizo Association are involved in in this programme.
7. In the field of co-curricular activities, the nature of the terrain does not allow the construction of many playgrounds. However, playgrounds are being made and games and sports are gaining popularity. Music and dancing are part and parcel of the life of the people.
8. A switch-over to the new type of examination involving short, very short, and essay-type questions has been made.

The Board conducts an examination at the end of class III for promoting students from Primary to Middle schools and another examination at the end of class VI to promote students from Middle to High schools. These are known as scholarship examinations since the students are awarded scholarships on the basis of these examinations. The HSLC examinations are also conducted by the Board.

In the field of Work Experience, grade-cards are prepared and the rating is done on a five-point scale by the teachers and the H.M. The grades are entered on a proforma bi-monthly at least and the final grade is arrived at. This grade has a weightage of 100 marks in the HSLC and other examinations.

Problems and issues

Though there is a wide network of Primary, Middle and High schools spread over each corner of Mizoram, the problems of curriculum development and the standards are often frustrating. There was no efficient or regular machinery to look after Primary and Middle school curriculum. The High school curriculum as planned by the Board of Assam and perhaps suited to the plain areas was unsuited to the tribal, rural and mountainous setting of the region. The Mizoram Board of School Education envisages a thorough revision of the curriculum by 1979.

Under the Assam administration the hill areas, being at the periphery, seemed to be neglected and no serious thought was given to the needs of these backward areas Then there was the often insurmountable problem of communication and linguistic problem.

Science, Mathematics and Social Studies can be singled out as the odd subjects. The abstract concepts involved in these subjects are difficult to be understood and absorbed by the tribal and rural areas. On the top of this, the presentation is far from encouraging. The presentation of these subjects must be done in a concrete way suited to the people. Besides, there is an acute lack of laboratories and experienced science graduates, etc. Social Studies is introduced suddenly in class VIII while from classes I-VII, the different disciplines are taught. This puts both the teachers and the students in serious difficulties.

Regarding the medium of instruction, the mother tongue is the medium of instruction till class VI. From class VII, the medium of instruction is English. Though English is learnt from class III, the four years spent in its learning are insufficient to enable the students to use it as the medium of instruction. This leads to bilingual presentation which entails a huge waste of time and mis-education. The students write in English, and they are incapable of expressing themselves in English. Hence the percentage of pass at the HSLC was hardly 18 to 20%.

Hence the possibility of having the mother tongue as the medium of instruction is being considered. But the administration feels otherwise causing another serious bottleneck. The whole of the educational system is administratively oriented rather than academically oriented. Hence positive, on the spot guidance which would have led to a qualitative improvement, is lacking.

Curriculum Development for Non-formal Education in Mizoram

Zosiama Puchuau

Background

Mizoram, one of the Union Territories, has an area of 21,000 sq. Kms. with about 4 lakhs of people. The inhabitants are Mizos, the language spoken by 95% is Lushai (written in Roman script). The literacy percentage is 53%. Christianity is the only religion of the people today. The people are hard-working and hospitable. They are lovers of education, singing, music and dancing.

Non-formal education is introduced in this union territory as an alternative circuit of education. The people, young and old, accept that only education is enough to lead them to a more prosperous and happy life. The target of non-formal education is focussed on the age group 15-40. This age-group is chosen for the following reasons.

(i) Non-availability of schools in pre-independent period in many villages.

(ii) Dislocation in the economic and social life of the people due to the political up-rising in 1966.

To make non-formal education responsive to the needs and aspirations of the rising generation of Mizoram, curriculum for non-formal education is formulated taking the following into account:

Land formation, Mode of cultivation, Social setting, Economic conditions and Religion.

Core curriculum

(1) 3 R's (2) Social Service (3) Health and Sanitation (4) Rural Development.

All adults (illiterate) accept they should be able to solve the basic needs of man. Knowledge of 3 R's is considered essential. Every boy or girl above the age of 14 years is to be a member of young Mizo Association (YMA). It is the duty of the YMA to see that water-points, approach roads, maintenance are properly done throughout the year. Each village is to have at least one play-ground and community hall constructed and made by themselves on voluntary basis. Every boy is expected to be able to play some games and the guitar. All boys and girls above 14 years are supposed to be able to give all possible and voluntary help to their neighbours according to necessity. The YMA has to make sure that each family in the village has latrines and urinals.

Work content

(1) Agriculture (2) Horticulture (3) Co-operative Society (4) Weaving (5) Tailoring (6) Knitting (7) Popultry farming.

Since about 80% of the adult population are engaged in agricultural work, the illiterate adults to have to know or study the different methods of cultivation prevailing, the types of soil, the variety of seeds, the condition necessary for germination, the average rainfall in different months (application of fertilisers, what, how, and when) the use of pesticides, and insecticides (how much, and when), the natural calamities like the cyclones, the flowering of bamboos, the control of rats; the advantages and disadvantages of jhum cultivation, its effects on forests, the advantages of permanent terracing cultivation, the manpower involved in the production and the gross net profit. What intensive or extensive improvement would be necessary for the increase of production. Knowledge content inherent in the work are brought to the forefront.

Agencies for implementation of the curriculum

1. *Social services* :	
Government agencies	(a) The Social Education Department (b) Social Welfare Department (c) Community Development—
Local agencies	(a) Young Mizo Association (YMA) (b) Village Councils (V/C)
Activities	Construction of Playgrounds, Community Hall, Water points & Approach roads, Public latrines and Urinals.
2. *Agriculture* :	
Government agencies	(a) Agriculture Extension, Officers/Agriculture Demonstrators. (b) Block Development Officers/Gramsevaks (c) AIR Broadcasts twice daily
Local agencies	(a) Field Management Committee (b) Village council
Activities	Agriculture Department supplies different varieties of seeds, seedlings, insecticides,

Pesticides, bonemeal etc. at subsidised rates. Meeting of the experts with FMC & V/C members.

3. *Health Education and Sanitation* :

Government agencies	(a) Doctors, Nurses & Pharmacists from Primary Health centres (b) Health Education Officer and Nurses from Family Planning department.
Local agencies	(a) Y.M.A. (b) H.I.P. (Hmeichhe Insuihkhawm Pawl) (c) (V/C)
Activities	Organising meeting of the Parents and Youths Lecture on essence of health and sanitation. Preventive measures for epidemics. Cleanliness of the street, Latrines, Urinals (Public & Private) regularly checked by local agencies: Award of Prize to the best families.

4. *Co-operative societies* :

Government agencies	(a) Inspectors of Co-operative Societies. (b) Local experts in business and accounts.
Local agencies :	(a) Members of Co-operative Societies (b) Local experts is business and accounts.
Activities	Purchase of local products: Cash crops, sale of essential commodities at concessional rate, maintenance of accounts—receipts and expenditure.

5. *Weaving* :

Government agencies	(a) Trained experts from Industries Department. (b) Gramsevikas from Development Blocks.
Local agencies	(a) H.I.P. (b) Local experts
Activities	Supply of sewing machines to interested local tailors at subsidised rates. Training in tailoring: Cutting of different designs, sizes.

Impact

It can only be said that the non-formal education in Mizoram has benefited many illiterate adults in their way of living. Many parents who received no school education in their childhood are today able to read and write. Quite a number of businessmen, contractors and active members of cooperative societies in the town and villages receive non-formal education which make them fairly intelligent and efficient.

Problems and issues

Non-formal education in Mizoram has some drawbacks. (1) The government agencies in agricultural development, the Agriculture Extension Officers or the Agriculture Information Officers are too busy in their office to help in the actual field. (2) The doctors and nurses fail to see the role of local youth in rural health education The parents can understand the health education better if the youths explain it to them in a simple way. (3) The government always fails to see the roles of local agencies like Young Mizo Association (YMA) Games Associations (G.A.), Hmeichhe Insuihkhawn Pawl (H.I.P.). Field Management Committee (F.M.C.) and Village Council (V/C) in organising non-formal education in the area. Non-formal education can be more effective if and when local agencies are given higher or more responsibilities. (4) Since most of the adult population is engaged in their work from 8.00 A.M. till 5.00 P.M., non-formal education should not disturb their normal working hours Hours before 8 A.M. or after 5 P.M. are the suitable timings.

Curriculum Development in the Union Territory of Pondicherry

A. John Louis

Background

The Union territory of Pondicherry is such a small state that Indian Geography writers often forget to mention about it. One has to search for a considerable time to locate the constituent components of the state that is known as the Union Territory of Pondicherry on the map of India.

For the present, it comprises four units. Two units, separated by a hundred miles are located on the eastern Coramandal coast, and are known as Pondicherry and Karaikal. The third unit, Mahe, is on the western coast of India near Tellicherry and Cannanore of Kerala. The fourth unit of Yenam is on the banks of Godavari near Kakinada, Andhra Pradesh. Fortunately, to avoid further complications the fifth unit that was part of the Union territory of Pondicherry, known as Chandranagore was mercifully merged with West Bengal.

As a result of historical forces and various other compulsions of history these units were under the French rule for nearly 300 years. After the departure of the English from the soil of India in 1947, it became a matter of time before which the French had also to quit their Indian possessions. Ultimately, the French left the Indian soil in the year 1954.

Jawaharlal Nehru, the first Indian Prime Minister, who understood and cherished the French language promised to keep Pondicherry as an open window for French culture and language. As a result of this policy the union territory of Pondicherry was born and its distinct uniquenesss maintained to this date. The sweet fragrance of French culture still lingers on.

Education under the French colonial rule

The French system of education in India was modelled on the system prevalent in France. The primary stage terminated at the 8th year class with a 'certificate' Examination. Both written and oral examinations were conducted. The books were all Paris-prescribed books.

The medium of instruction was French. But the local mother tongue was also taught as a grudging recognition of local realities. Then a pupil could further study upto what was known as 'Brevet' which is equivalent to matriculation. That was the school final stage. Further studies of undergraduate courses was available only in Pondicherry city when a student could continue upto 'Baccalauriate' that is graduation. The question-papers for that examination were set in Paris and the answer-scripts were flown to Paris and evaluated there. In addition to the written examination there was an oral test too.

The French system of education was a highly centralised one, the examinations were very tough and only a prodigy could get through them. For every 100 candidates that appeared annually for these examinations, only a handful passed and for a few years the results were even blank. The French educationists were not dismayed at this. On the contrary, their conviction that this system of education was the best and the toughest, got fortified.

Thus during the French colonial rule in spite of the French liberal traditions, intellectual snobs were produced, and a 'baccalauriate' candidate knew more about the Alps, the Sien, and the beautiful port of Marseilles than river Cauvery or Ganga or the Mount Everest. He knew logic, studied philosophy, read something of Aristotle, Plato down to Kant and Hegel, mastered advanced mathematics and the laws of thermodynamics but knew precious little of India, Vedanta, Kalidasa, or Gita.

Such was the state of Education that the independent Government of the Union territory of Pondicherry had inherited. If, as it is often said, that the British gave us a system of education just to produce a number of lower division clerks to keep the administrative machinery running, the French on the other hand produced Indians in their own image, and insisted the same metropolitan standard of Paris on an Indian boy or girl.

The unique features of the state

After independence, i.e. after 1954, it was the task of the Government to popularise primary education. In an effort which deserves admiration, schools were opened in all villages and hamlets. There was a sprout of single-teacher schools in remote rural areas catering to the needs of thousands of pupils. High schools were opened in each commune or village and quite a number of communes had more than one school. The local language was made the medium of instruction right upto the school final stage. Schools located in Karaikal and Pondicherry which are nearer to Tamil Nadu were affiliated to the Board of Secondary Education, Madras; Mahe which was nearer to Kerala was affiliated to the Board of Secondary Education, Kerala, and Yenam which was nearer to

Andhra Pradesh was affiliated to the Board of Secondary Education Andhra Pradesh.

In Yenam

The primary stage is from 1 to 7
The High School Stage is from 8 to 10
Followed by 2 years Junior College and then 3 years of Degree Course.

In Mahe

The Primary stage is from 1 to 7
The High School stage is from 8 to 10
Followed by 2 years Junior College and then 3 years of Degree Course.

In Karaikal and Pondicherry

1 to 5 is the Primary stage
6 to 8 is the Middle stage
9 and 10 High School
2 years of Higher Secondary classes
Followed by three year Degree course.

By force of historical necessity the Government of Pondicherry declared that it recognises 5 languages as official languages, namely, Tamil, Telegu, Malayalam, English and French.

Hindi is taught as a compulsory third language to all pupils in Mahe and Yenam whereas due to extraneous political considerations Hindi is not taught as a compulsory third language in Pondicherry and Karaikal.

At present all the schools affiliated to the neighbouring Boards of Secondary Education are preparing their wards from 1 to 10 standards according to the curriculum, syllabus and text books prescribed by the neighbouring states. We have absolutely no say in the matter. We simply follow the pattern adopted in the neighbouring states.

When Madras abandoned Hindi, we followed suit. When Madras introduced eleven-year pattern of education we introduced the same scheme. When Madras decided to abandon it, we too abandoned it with greater alacrity. Now Madras has opted for the controversial 10+2+3 system of Education from 1978-79 onwards. Pondicherry accordingly tailored its programme and has adopted this system, irrespective of the fact whether our schools are really equipped to shoulder the imposition of this new burden of higher secondary stage.

Even in matter of text books we follow the same policy. We have no say in the curriculum which is decided by experts in Madras, Trivandrum and Hyderabad.

It would not be out of place here to say something about French education at present. There are separate French schools 'Ecoles' as they are called in French, catering to the needs of children who are particular about having their education in French. Mostly children of French retired officials, 'ancien combatants'—retired soldiers and those who had opted for French nationality are studying in these institutions. The French Government is subsidising these institutions, supplying French text-books free of cost, and even depute visiting professors from France to teach French and supervise French teaching in these institutions. We have a special officer for French education to look after the interests of French education in Pondicherry.

We have seven colleges, one law college, one polytechnic, all affiliated to the universities of the neighbouring states We have two Teachers' Training institutes training Secondary grade teachers

In addition to these government-run-institutions, Sri Aurobindo Ashram has embarked on a unique scheme of education of its own on the spiritual lines enunciated by Sri Aurobindo himself and the Mother. Physical education and culture is given a predominant place in this system of education. Sanskrit, English and French are compulsorily taught to children in the Ashram. They have their own system of assessment and promotional schemes. No certificates are awarded. In Auroville, the international dream-city of the Mother a new type of schools is being conducted where even dancing is taught as a compulsory subject.

Administrative apparatus

We have no state Institute of Education, or an S.C.E.R.T. We have a Department of Education with the Director at the apex and two Deputy Directors with one Assistant Director of Education for women. They administer the schools through the District Educational Officers and Deputy Inspectors of Schools.

After attending to the quantitive expansion of Education, the Government at present is applying itself to the task of effective qualitative improvement. Almost all our secondary grade teachers handling primary classes have been given in-service training in Physics, Biology, Chemistry, and Modern Mathematics.

The anti-innovative approach of mass teaching and thrusting tit-bits of information on unwilling pupils, and the 'one-way monologue' that is characteristic of many a class-room situation, is slowly giving room for greater appreciation of modern trends in education and the pupils' active participation in the class-room is clearly accepted. Internal assessment of the pupils in place of the banal system of examination is being actively contemplated for implementation.

The process of change is however painfully slow. Our teacher's ability to overcome inertia, inactivity and cynicism is increasingly put under severe test. In the midst of the grim struggle against the strangulations of casteism, marked by confused loyalties in the political realm, in the midst of unrest and deprivation and in the midst of mal-nutrition, ill health and abysmal poverty, the image of the teacher battling for the 'minds of men' has indeed acquired tragic proportions. But the teacher cannot afford to lose. For, if he fails who else and what else can succeed.

SECTION III

PANEL DISCUSSIONS

THEME I — New Trends in Curriculum Development at Primary and Secondary Stages—General

MEMBERS OF THE PANEL

Dr. M. S. Mehta
Dr. N. Vedmani Manuel

[*The changes made in the curriculum in our country in the past did not succeed in making it effective, purposeful and dynamic. It is only in the very recent past that serious thought has been given to revitalize it and make it a significant means of national development. Dr. M.S. Mehta asserts that it is not knowledge but the child who should occupy the central position in any curriculum development. Too much of classroom instruction must yield place to child activity, exploration and enquiry. It is rightly emphasized that the child should be motivated to seek knowledge and involve himself in self learning. The concept of freedom should be interwoven into the curricular aspects. Prof. Vedmani Manuel gives a broad overview of new trends in curriculum development some of which are due to the ideas of educational thinkers like Piaget, Bruner, Gagne, Bloom, Suchman, Schwab. As knowledge expands rapidly it becomes imperative to develop intellectual processes like logical thinking, concept formation, skills of exploration, inquiry and discovery. Elements of new trends may be properly utilized in developing an effective curriculum.*—EDITOR]

Dr. M.S. Mehta while speaking about curriculum development stated that constructing a proper curriculum is a difficult and complex task. There are many problems and no ready solutions. He remarked that in general, in all curricula, stress is wrongly given to the quantum of knowledge and not to the child who is the receiver. There is too much of classroom instruction and too little of education of the fingers. The question how far our curriculum is in tune with our social needs and future aspirations. We tend to adopt ideas from outside. Suitable changes should occur but they should occur gradually and not abruptly. A small beginning can be made in which some classes may spend some time in a village to learn in a realistic way the related aspects in the syllabus. This is learning in real setting. Curriculum is to be related to the national goals. Here also, only those goals that satisfy the needs and aspiration of the people and are acceptable to the entire society should be kept in view because many factors influence the delineation of national goals. Educational independence must be maintained.

At present the syllabus is such that knowledge is brought to the child. But this process should be reversed and the child instead of being led to knowledge should go seeking knowledge. This aspect has two phases. The dividing line need not be rigid. In the first phase the teacher should initiate the child and arouse his curiosity. In the second phase the child goes to knowledge. This is self-learning which is true learning. In this phase, activity, exploration and discovery should be emphasized.

Our system of education does not provide sufficient freedom to the child. A class-room should have ability-based sub-groups. To make the child discover the world around him and seek knowledge, freedom is essential. The teacher should be aware of the developmental processes. In order to develop the spirit of discovery and help in self-learning, the school can go out for a camp for about 2 or 3 weeks and the syllabus is to be prepared by the teacher.

There should be freedom of all kinds in the schools and this freedom should be utilized cautiously and purposively. There should be freedom for the child for self-development, freedom to the teacher to adopt new procedures, freedom to make the curriculum flexible. The task of curriculum development should be decentralized to a large extent. It may be the task of a group of schools also.

During the discussions the following problems were raised. Do we have teachers capable of properly utilizing the benefits of flexibility and decentralisation ? Do we have teaching competence that provides for the child to progress at his own pace ? Should formal and non-formal types of education function in isolation from each other ? How far individual attention can be given ? As a result, the following observations were made. We can make a small beginning where teachers are capable of suitably exploiting the flexibility of the curriculum and its decentralization. Let us give the best and then see how much can be achieved. The child develops on his own and the teacher is like a gardener who tends the plants that grow on their own. An effective teacher training programme is essential. It is desirable that formal education should be made as informal as possible. The ideal system of individual attention is one teacher and one pupil under a tree. Since this is not feasible the solution lies in the freedom to modify the syllabus to cater to the individual needs.

Participating in the discussion Prof. Vedamani Manuel dealt with the new trends in education and curriculum. He stated that new trends move in cycles; they move forward and backward. A new trend, after some time, is in its turn influenced by another trend either positively or negatively. Sometimes, the hindering blocks may even accelerate a new trend.

A curriculum may be (1) discipline-based or situation-based; (2) concept-based or environment based; (3) urban-oriented or rural-oriented; (4) Classroom-oriented or community-oriented (5) centrally-oriented or peripherally-oriented (6) formal-oriented or non-formal-oriented. He remarked that in practice there can be no rigid polarization in the two components of each set. There is discipline in a situation; rural model should have elements of urban model, the formal and non-formal models are to be related.

Even an old thing or subject, if it is used for new purpose, becomes new. The essentialists in U.S.A. view the old subjects as means of intellectual orientation. The impact of significant events, like the launching of the sputnik, is also felt in the development of new trends. New trends also come to light due to the influence of new ideas of educational thinkers.

Prof. Manuel discussed the ideas of Skinner, Piaget, Bruner and others, which have greatly influenced the teaching process and the preparation of textual materials.

Prof. Manuel pointed out that now-a-days the 'discipline' approach is becoming more acceptable than the 'subject' approach. The structure of the discipline should be studied rather than the content of the subject. History should be studied from the historian's approach. Exploration and enquiry are to be given priority.

Education is never fruitful unless the student goes in search of knowledge, that too towards right knowledge in the right way. The teacher should stimulate and motivate the student in moving towards knowledge. The teacher too should move towards knowledge which would be most suitable for the pupil.

If we bear in mind some of the essential factors in respect of the new trends in curriculum, a suitable and practical curriculum is feasible.

New Trends in Curriculum Development

N. Vedmani Manuel

It is not proposed to list in this discussion all or even the most important curricular developments in the country and abroad in recent years. The new trends are so vast and variegated that considerations of space would prohibit even listing all of them in a short discussion like this. Moreover, the article by Brian Holmes (1974)* on curriculum innovation at second level has already been circulated as a background paper among the participants by Prof. Mehdi which gives an excellent resume of the historical and comparative factors. So it is proposed here to focus on some dominant issues which I consider important for the curriculum dialogue in India, in the light of the difficulties that the large number of pupils and teachers have faced as a result of the sudden upgrading of the syllabus, particularly in science and mathematics and the distortions which took place in the process, and in the light of the recent rethinking about the subject. In my view, both the upgradation and the demand for reduction tend to be conceived in quantitative terms such as addition of one year's equivalent of content during the school course, reduction of the load by one-third, etc. The qualitative analysis of the learning process which can help to make the learning a joy seems to be missed in the discussion. The upgradation process, in my view, was an indirect chain effect of the new trends set all over the world in the immediate post-sputnik dialogue. The transference of segments of the product curriculum which emerged abroad as a result of the discussion, without an adequate understanding of the spirit of the reform or of an insight into the dialogue, was responsible for the large scale distortions in our curricula and in converting into a torture what is potentially a joyous operation. It is true that a few members of the groups set up by Dr. Kothari in the late sixties and some innovative teacher-groups, particularly in Madras and Coimbatore were aware of the concept-processing dialogue, but the product and scissor-and-paste slant were dominant in the minds of the main body of teachers and even state-level leaders operating the scheme. Since curricular reform (or re-reform) is not simply a question of pouring in more water through a funnel or siphoning out some of it in response to a political decision, it is felt that a discussion of the conceptual base and background of the recent curricular trends might be useful.

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*Brian Holmes. Curriculum Innovation at the Second Level of Education : Introduction to the Select Bibliography, Educational Information and Documentation Bulletin of the International Bureau of Education No. 190, Ist quarter, UNESCO, Paris, 1974.

It should not be assumed that the new trends discussed are entirely new. Actually new trends are recombinations relevant to a particular situation of several factors, many of which can be quite old In some cases, an innovator of the distant past may represent another equally or more relevant version of a modern innovation. Skinnerian programming can thus be set against Socratic programming, the analytical procedure, step-by-step approach being common to both. Yet the learning theory and philosophy are different, and there are educationists who consider the Socratic approach to be more revolutionary and modern in spirit. Another aspect to be noted is that any new trend set by an innovator tends to be distorted by his followers with the result that a counter trend soon follows at least as remedial measure. Sometimes, the counter trend is not a mere reaction, but a new synthesis, in which case an older approach gets revitalized to obtain the status of a new trend. For example, the dry, excessive and encyclopaedic emphasis on subjects trigerred off the progressivistic and situational approaches in U.S.A. in the 30's. But such integrated and functional approaches adopted without the high level competencies required led to the reassertion of the subjects with the new disciplinary slant. Sometimes a new curricular trend obviously follows from social pressures and from technological changes and predictions, in which case, the newness soon passes away, and the demand for the newer soon follows.

The event which sparked off keen curricular interest in the west was the Soviet sputnik of 1957. American educators found that the vast majority of Soviet school pupils were studying in 10 years what according to western psychology only 15% of the population had the I.Q. to study, and that too, in 12 years. Even before that there were American educators who were concerned with the leisurely and 'undisciplined' progression of studies in the common American school. The sputnik gave a boost to such thinking, and they felt like 'poor cousins whose great aunt had just died and left them a fortune'.

The following are the dominant trends which followed :

1. There was a demand to study the subjects in a disciplined manner, with emphasis on the *structure* rather than on the content of the discipline (Bruner, Schwab and most revised curricular materials).
2. It was emphasised that the structure of a discipline can be taught by the ordinary teacher in the ordinary school to the ordinary pupil

(Bruner).

3. Bruner's creed that anything can be taught to anyone at any stage in some honest form inspired a number of disciples to discover the *honest form* in which abstract concepts can be taught to young children.
4. Piaget's *stages of cognitive development* (sensori-motor, pre-operational, concrete operational, and formal operational) and his other contributions in concept learning and in genetic epistemology became popular all over the world. Bruner condensed the Piagetian stages into three, viz., enactive, iconic and symbolic, and used it to accelerate conceptual learning. Topics like Archimedes principle, inclined plane, screw guage, etc. were presented to very young children as enactive and iconic operations. But premature verbalisation was carefully avoided. The terminology was never allowed to precede the intuitive understanding of the concept, largely through non-verbal operations.
5. Armed with these approaches, discovery learning was emphasized from the earliest stages. Bruner asserted that in the beginning the student of physics learns the subject better by being a physicist than by doing anything else. Suchman developed inquiry approaches in which challenging phenomena would be demonstrated and students encouraged to ask as many investigatory questions as possible. Schwab postulated the concept of 'fluid inquiry' in which the student has to discover not only knowledge, but also the method of discovering it. (In stable inquiry, the methods are well known, and inquiry consists in applying them and filling in the blanks in knowledge.)
6. Excessive emphasis on discovery approaches set in a reaction. Ausubel carried on a tirade against the discovery and inquiry approaches. He emphasized verbal learning and the importance of the teacher. To the extent that Ausubel's verbal approaches are more than mere verbalisms and rote memorization they also represent a new trend.
7. Gagne's learning hierarchy starting with the simple signal learning and proceeding upward through stimulus-response learning, chaining, verbal association, multiple discrimination, concept learning, rule learning and problem solving is another approach helpful in processing learning from the disciplines point of view (as against the child development point of view). This too gives importance to the teacher or the programme which controls the learning.

Several curricular schemes like CBA, CHEM study, BSCS, SMSG, UICSM and PSSC came into operation. Of these, PSSC alone started work before 1957. All of them emphasize inquiry and process approaches rather than facts, the unity and structure of the discipline rather than 'ephemeral technology', simple experiments developing qualitative insight before quantitative precision, intuitive understanding preceding terminological formulation. Outdated, irrelevant and unimportant topics are omitted. The textbooks are supported by teacher guide-books, laboratory guides (which emphasize experiments rather than exercises), films, supplementary books, etc. In the preparation of the materials large teams of scientists, mathematicians, psychologists, educators and school teachers are involved.

The British curricular materials like SMP, Nuffield Physics, Chemistry, Biology also reflect the trends of inquiry, structure, etc., but the tendency to accelerate under the sputnik challenge is not so obvious. These materials are usable at a lower level and are much more down to earth, at the same time reflecting the high analytical thinking and process possibilities when multiple level, high calibre teams are able to work on non-imposed terms of equality. Some of the very practical investigatory models as in Science 5-13 : Environmental approaches and Scientific toys are worth mentioning. In the British curricular programmes, the practising teacher has a more prominent role than in the programmes of the U.S.A. listed earlier, which have largely been conceived at higher education level, though collaborating teams were formed using school teachers also. Some mistakes committed by those who depended largely on the *product* materials like those of the CBA or SMSG (secondary version) might have been avoided if the British approaches at the lower levels had been collaterally used.

In France the innovations are designed primarily at *l'Institut Nationale pour la Recherche et la Documentation Pedagogiques*, in the *Centre International d'Etude Pedagogique* and in the *lycees pilotes* (*pilot* secondary schools). One practice in INRDP is to form inter-disciplinary teams which analyse all the disciplinary possibilities when modern approaches like 'Scientific Awakening Activities' are attempted with young children. M. Hoet and group have developed an elaborate taxonomy covering language fundamentals (including mathematical language, oral and written language, symbols and codes), techniques pertaining to the scientific discipline, techniques not pertaining to the disciplines, etc. Such an elaborate taxonomy and learning materials built around it are tried out in the pilot schools. This approach seems to be particularly relevant when a centralized system takes the initiative to encourage decentralization and experimentation.

U.S.S.R. has been in the forefront in upgrading the curricular materials in the common school and in upgrading the mass base in science and mathematics. It has also long been using high level academicians in preparing materials for children. Before finalization of the syllabus, try-outs and open consultations with teachers are conducted on a very large scale, though the type of multiple-level team work as in U.K. and U.S.A. is perhaps on a more limited scale. The support given by the education workers (the Soviet counterparts of inspectors-cum-supervisors) in the implementation of the curriculum and by the extra-school agencies like the circles, stations and pioneer palaces in creating a high non-formal science education has been powerful factors accounting for the Soviet success.

Plenty of materials have been produced in Germany not only in modern mathematics, but also in teaching of the field. Mention must be made of the material for popular and adult education in the area. Dienes logic-blocks and other materials have been adopted and logical games with the help of kits have been developed for children and adults in *ABC der Logic* and other works. Mathematicians associated with the *Deutsche Fernsehan* (television) have produced materials including books for adult education like *Eltern entdecken die neue Mathematik* (*parents discover new mathematics.*)

Science and mathematics have been focussed so far because the conceptual processing and inquiry approaches are best illustrated here. The immediate thrust of modern technological developments and of the sputnik stimulus were also felt directly in these subjects. But changes in other subjects also followed.

Interest in the reformation of the humanities curriculum was felt in the U.S.A. around 1965. The complexities of social organization created by the presence of machines before which we experience a sense of impotence and alienation were realised. The need for critical examination and reconstruction of the cultural heritage in the light of current problems was re-emphasized. The qualities and powers that individuals must develop even to survive as human beings in a machine-dominated world, let alone control the forces let loose, began to receive importance. Programmes to reduce the inequalities in education, particularly compensatory programmes for the disadvantaged began to receive attention.

The dominant new trends in the social sciences include: (1) effort to establish the conceptual frame-work for social studies instruction. Some have even attempted to apply Brunerian principles and other structural and investigatory approaches. The analysis of the major concepts from the social sciences appropriate for school programme, examination of the *workways* of these disciplines and the development of materials to translate the concepts and workways into classroom practice are receiving attention. (2) More skillful planning for the cumulative and sequential development of skills and generalisations is being undertaken. (3) There is a movement away from broad surveys towards more intensive and careful study of a limited number of topics. (4) The dominance of disciplines like history, geography and civics is being reduced and attention given to other social sciences like economics, sociology and anthropology. (5) More attention is being given to the possibility of developing a 'world-view' through social studies instruction. (6) More provisions are being made for a serious study of some of society's unsolved problems. (7) The multi-media approach in the preparation and selection of learning material is gaining ground (Adapted from the analysis of Dorothy Mcclure Fraser)

Language education has also undergone major transformation in the years following World War II. The audio-lingual approach to foreign language learning has been acclaimed as the 'American method'. In the post-sputnik period, plenty of money has been put into foreign language learning to increase the range and quality of teaching languages. A large number of experiments have been conducted ranging from the huge *Parlons Francais* (Let us speak French) T.V. Project to many small ones The dominant curricular innovations include : new patterns of staff utilization—varied combinations of specialists, non-specialists and native informants,—different types of student groupings, use of electro-mechanical aids; adjustment to individual differences using multiple tracks and programmed materials, exploitation of learning readiness which varies inversely with age, use of visual aids, especially films, to increase cultural and linguistic authenticity, production of new teaching materials based on principles of scientific linguistics and development of new teacher-training procedures (from the analysis of Bruce Gaarder). Some of these developments are not relevant for our conditions. The applications of linguistic analysis and the use of new teaching materials are relevant. The Education Commission's valuable recommendations on the library language concept and the use of foreign languages other than English are areas where much more work needs to be done. Many studies from the Prague School of linguistics seem to be particularly relevant in this context. Classical languages teaching is also being revolutionized, using modern analysis, materials approaches and even programming. It is interesting to note that Sanskrit teaching has been open to some of these influences. In the teaching of the mother tongue, the tripod of language, literature and written composition is getting greater importance. Some experiments like discourse analysis, simultaneous teaching of French and modern Mathematics (INRDP), give new dimensions to mother tongue teaching. In language education, the research base in the country, in the light of the new trends, is quite high, though different schools may be emphasizing different aspects. The work done by CIIL (Mysore), CIEFL (Hyderabad), several wings of the NCERT and several linguistics departments and schools (mention must be made of the Cognate Language Project of Prof. V.I. Subrahmaniam and colleagues in the Kerala University) are commendable, but large scale educational applications of such work need to be made.

Art education is being given great importance in the educational systems of the world in terms of (1) the development and refinement of sensory experiences (2) the development of creativity (3) personal adjustment and (4) the development of appreciation of open aesthetic attitudes, and of confidence and competence in matters of aesthetic judgement. Recent developments in modern art, existentialist analysis of awareness, and sensitivity to one's own needs have contributed to art education. Phychological analyses and studies in the areas of (1) the aesthetic-forming or studio participation dimension and (2) the general creativity dimension are creating a revolution in art education in the developed educational systems of the world. In music education creativity has been emphasized from the forties In the sixties more importance is being given to music as an academic discipline in the schools. The sociological and cultural analysis of music are gaining importance. In addition to music in one's own country, the classical music in other countries, music history and folk music within and outside the country are emphasized. Carl Orff's experiments in Germany on *Music fur Kinder* are attracting attention. More emphasis is being given to the identification and nurture of talent. Space forbids the discussion of developments in physical education, health education and education in home science and in the vocational arts. But the broad principles discussed earlier hold good here also.

The integrated approaches of Dewey, Krupskaya, Gandhiji, Freinet and others started in the 20's and 30's emphasise social relevance and relevance for the growing child, and they are not less relevant today in spite of the modern emphasis on disciplines. Reaction against such integrated and progressive approaches set in largely because of the distortions which took place in mass scale administration of such complex procedures. Recent developments in environmental studies where the environmental approaches are themselves 'disciplined' as in Ekistics (Rudolph Schafer), the Strand approach, the grids in the K-12 span, the Soviet approaches, the French inter-disciplinary team work which can discipline integrated investigations like Scientific Awakening Activities (M. Host *et al.*) and Language and Creativity in Early Childhood Education (Mme. Laurent-Delchet *et al.*) show a way in which the two approaches could be synthesized.

THEME II — Problems and Issues Concerning Universalisation of Primary Education with Special Reference to Curriculum Plannning and Implementation

Dr. H. B. Majumdar

[*Primary education is of paramount importance for our country. Hence the educationists, thinkers, statesmen and others have been laying emphasis time and again on the universalisation of primary education. The problems of primary education are manifold but the significant among them are productivity and relevance. The major failure of universalisation lies in the implementation of a faulty curriculum. Hence the need for developing a need-based and flexible curriculum. All our efforts in this regard have to be directed to for enabling the children of underprivileged and weaker sections of the society to emerge from the dismal abyss of ignorance*— EDITOR.]

Prof. H.B. Majumdar discussed the theme from different standpoints and analysed all the problems and issues in a realistic manner.

1. Curriculum at the Primary stage should aim at an integrated development of the body and mind, a balanced development of every individual child and also at laying the foundation for the child to grow into a responsible and useful citizen of our society. For this purpose it should inculcate moral and social values, develop communication skills, work efficiency and citizenship qualities, attitudes and values for effective participation in social transformation and for living in a co-operative and democratic social order.
2. Approach to the curriculum:

The following three tasks should be kept in view while framing the Primary Curriculum:

(i) The task of universalisation and for that matter the task of bringing 60-70% of the children who belong to socially and economically disadvantaged sections of our community, including the first generation learners and of keeping them in the schools upto the last class of the Primary school.

(ii) The task of improving the quality of Primary education on which depends successful fulfilment of the first task and also its proper articulation with the higher stage of education. The main criteria for quality should be its functional utility, life centricism and interest orientation. This would mean a simple, practicable, implementable and need-based curriculum--which gives high priority to the needs of the children as well as the needs of the weaker sections of the community in particular at least for the next decade, during which period, we shall have to work under heavy constraints. The issue therefore lies in harmonising the needs of the child with those of the developing society. The main criteria for the quality of the curriculum would be its ability to attract the children to school, to inspire parents to send their children to school for worthwhile education and to hold them there once admitted. It is to be remembered that one of the major failures of universalization is due to implementation of a faulty curriculum in its broader sense. Furthermore, to ensure quality the emphasis will be shifted from verbalization and memorisation of irrelevant material to cognitive development resulting in understanding and conceptualisation through play, activity, experience including work-experience.

(iii) The task of evolving a simple, flexible and yet meaningful, functional, life-centric and socially relevant curriculum for all children living in urban and rural areas, keeping primarily in view the needs of the vast majority and of socially handicapped children and the wide variations and constraints under which our school system works and will continue to work till our economic status is raised considerably.

Such a curriculum should be related to the quality of teachers that we can afford to have, the facilities that can be made available in the school and in the neighbourhood, the needs of the children with reference to their socio-economic background and parental aspirations

The simple and flexible curriculum which will be followed in all Primary schools will have scope for enrichment programmes for talented children.

In the next ten years attempts should be made to remove educational imbalances and inequalities by providing more facilities to the weaker sections of the society.

The approach to the curriculum should be one of activity and experience. The present text-book centered and text-book dominated approach should be replaced by an integrated approach promoting self-activity and self-learning, discovery, observation, exploration, integrated studies, minimizing the load of textbooks by avoiding their over-dominance. Teachers and students will make continuous efforts to enrich and enliven curricular experiences by making use of the local environment, current topics and events and local resources. Teachers must have skills in curriculum development. Flexibility within the general framework of the curriculum and adaptation to local conditions will therefore be the guiding principles in curriculum-making for universalisation as this approach will bring curriculum to the door-step of each child by fulfilling his needs as well as needs of the community in which he lives.

While selecting content matter for each subject, care should be taken to avoid all kinds of alienating factors which weaken and reduce social intimacy.

The structure of a simple curriculum for primary schools is suggested below:

1. Health Education, Physical Education & Games
2. Productive and creative activities
3. Integrated studies
4. Communication skills comprising:
    (a) Language (Mother Tongue)
    (b) Number
    (c) Environmental studies.

The integrated studies will make the curriculum flexible, adaptable and adjustable to local situations and needs and will offer freedom to teachers to integrate learning experiences with social living in a particular community in which the school is situated and also with the other three curricular areas. It will thus provide a scope for giving life and need orientation to learning thus helping the child to understand his own community, his physical and social environment and their relationship with living. This area provides the teacher with a "restricted freedom" in curriculum development.

Need-orientation and life-centered approach to curriculum is likely to motivate the parents belonging to weaker sections of the community to send their children to school and keep them there till the completion of the schooling period.

Doubt was expressed by some participants about lowering the standards if such a flexible simple and functional curriculum was introduced for all children. It was suggested that the whole question of educational standards needs re-examination. The standard in education is to be considered in terms of the objectives of education at a particular stage in education. It is not the cognitive development alone which should determine standards. Congnitive development does not mean amassing information and knowledge.

Right type of knowledge and learning are founded on concepts. Therefore there should not be a heavy load of content in the Primary curriculum. Then again, if the aim of the Primary curriculum is to develop the child as an integrally developed individual, as a learner, as a person, as a citizen and also as a worker, the standards cannot remain confined to the cognitive domain as at present. What is needed is a balanced concept of "standard" which keeps in its focus, all the three aspects of development viz., cognitive, affective and conative aspects. Let us therefore not suffer from an anxiety to give the child more and more knowledge in the name of raising standards in the formative years. Let us go slowly but surely so that a good foundation in cognitive development, which is important for human learning is laid in the primary years. In fact the Primary curriculum, as the Hadow committee recommended—and this recommendation is still valid in the age of explosion of knowledge—should be thought of in terms of activity and experience rather than in terms of facts to be stored.

Another question was raised regarding the influence of public examination on curriculum, teaching methods and so on. There is no denying the fact that a good curriculum fails to yield its professed results because of the compulsion and constraint exerted by the public examination. There is no place of public examination in a curriculum which is need-based and life-oriented. As needs vary from community to community, and as the aim of the Primary curriculum is mostly developmental in nature, in its implementation there has to be an in-built system of continuous evaluation as an integral part of teaching and learning rather than a centralised public examination. Logically it follows that in a programme of universalisation a system of annual examination for promotion to next higher class is out of place. Each child moves up the educational ladder at his own speed and instructional strategies should be so designed that each child is helped in his own programme of studies. This will also require a continuous system of evaluation and maintenance of objective records of all-sided development. A fresh outlook for our teacher training programme is needed so that our teachers can cope with this national problem of universalization. As a flexible curriculum presupposes a specific skill in developing a curriculum according to local needs, the teacher has to know the technique of curriculum survey with reference to community needs and child's needs, to adopt techniques of teaching which promote curriculum development and curriculum renewal and adjustment. The training programme should include practical experiences in curriculum development, which is an on-going and continuous process.

It may be summed up that for promoting universalisation the curriculum—

1. has to be need-based, flexible and adaptable to local conditions;
2. has to be simple, functional, utility based and not heavily loaded

with content,

3. should be able to hold the children till the last class in the primary stage;
4. should provide scope for development;
5. should not be dominated by a rigid examination system;
6. should be thought of in terms of activity and experience and should be work-oriented;
7. should take into account not only children's needs, but community needs also;
8. should be practicable, implementable with the heavy constraints under which we will have to work for the next decade.

THEME III — Community Involvement in the Implementation of School Curriculum

MEMBERS OF THE PANEL

Prof. H. B. Majumdar
Prof. N. V. Manuel

[*Curriculum has to be relevant to the real life, needs and aspirations of the people. Such a curriculum can be prepared only after assessing the needs of the under-privileged and obtaining suggestions from parents regarding the education of their children. Any change in the area has to be thought of on the lines they indicate. Community involvement is essential for removing the ills in the existing system of education to which only a small segment of our population is exposed. No civilized nation can afford to have such a large percentage of illiteracy. Education is the crying need for one and all. If we want to bring the total population to the threshold of education then we need the wholehearted co-operation of the community. "The school is for the community and the community is for the school"—is the only magic formula for solving the problem.*—EDITOR.]

Dr. H.B. Majumdar while initiating the discussion highlighted the importance of community involvement—

1. Curriculum development is an ongoing day to day activity. The teacher plays a major role in this process, but he cannot perform this function unless he seeks community help and gets it to the extent he needs.
2. The community will mean members of the immediate community in which the school is situated, its other resources, including all kinds of persons, viz., community leaders, administrators, educationists, professionals and so on.
3. The school is involved in rural development. Curriculum therefore has community development components related to health, sanitation, productivity, life style, food habits, housing, occupation and so on. In imparting instruction in these areas of development, community

co-operation and help are needed.

4. The school should maintain a living contact with the neighbouring community through a process of interaction, a process of "giving and taking". The school should have the conviction that it can also learn from even the so called 'illiterate' community members. That a community can help in curriculum development, should be recognised by teachers.
5. How can the community be inspired to give?
   - (a) Conduct a curriculum survey each year and be acquainted with the desires, aspirations, suggestions of the community members, which should be analysed and included in the annual instructional plan of the school. If necessary, make house to house contact (at least a sample of houses in case of the "illiterate" people.
   - (b) Make a survey of community resources and use them as and when needed. Prepare a register which should be reviewed.
   - (c) Acquaint parents with the kind of work that goes on in the school.
   - (d) Associate parents in solving problems of the school.
   - (e) Have a school improvement committee with representative community members.
   - (f) Acquaint pupils with the culture of the local community and develop respect for the same.
   - (g) Utilise Community expertise in developing school programmes.
   - (h) Adopt a grassroot approach in curriculum designing.
   - (i) Enlist people's cooperation and participation in developing school programmes.
   - (j) Make the school programmes (curricular and co-curricular) socially and culturally relevant to the needs of the immediate community.
6. Community involvement is needed in:
   - (a) bringing children to schools and retaining them there till the period of schooling (at least upto age 14);
   - (b) giving moral support to school programmes;
   - (c) providing or adding physical facilities to the school;
   - (d) lending resources to the school;
   - (e) participating in instruction;
   - (f) not unnecessarily interfering with the educational process adopted by teachers;
   - (g) curriculum evaluation and offering suggestions.
7. Develop each school as a community school by establishing and fostering interaction with school and community.
8. Evolve suitable strategies for school-community interaction in the following different situations :

(a) schools situated in traditional and undeveloped society
(b) schools located in a changing and developing community
(c) schools situated in a sophisticated community.
(d) schools situated in a hetrogeneous community; mixed-community.

Participating in the discussion Prof. N. V. Manuel stated:

The school has been designed by some as an isolated community. So we find that there is an artificial bridging between the school and the community. But the school is to be a model for improving the community because the school is an integrated community. The social environment and the natural environment can be met and related only by crafts. Academic transmission can be done by means of developing a model community.

A dedicated, competent teacher is essential to develop such a school community.

The departments of agriculture, fisheries, health, etc. have had the greatest impact in their fields. Operations that have been done by other departments should be translated to suit the school curriculum.

If there is self-respect in the educational community, the involvement of the community in school curriculum is not a hard task.

THEME IV — Teacher Participation in Curriculum Development

MEMBERS OF THE PANEL

Dr. R. C. Das
Prof. K. N. Srivastava
Dr. (Smt.) Indu Dave

[*Curriculum is a cyclic process. It has to be planned, developed, implemented and evaluated in order to be planned again, for making it more meaningful, based upon the results of evaluation. The importance of involving all the concerned agencies in developing the curriculum can be ignored only at the expense of the very values of curriculum. Among them the teacher is the most significant agent and plays a key role. He has to be involved in all the stages of development of curriculum which he has to implement. This would help in making it more realistic and practicable and would ensure a better involvement of the teacher in its implementation.*—EDITOR]

Initiating the discussion on 'Teacher Participation in Curriculum Development', Dr. R.C. Das highlighted the following aspects :

What is curriculum ?

The term Curriculum implies the sum-total of all experiences that are provided to the pupils in order to achieve the objectives of education.

How can curriculum be specified ?

Usually the contents are specified. But we have to specify the learning experiences and behavioural outcome.

Why is a curriculum needed ?

A curriculum is needed in order to attain the objectives. So objectives have to be defined in terms of expected out-comes of pupil-behaviour. If the curriculum is thus specified we know the present status of the pupil and the expected out-come and the gap between the two. Then we know where and how to guide the child through suitable experiences. If we do not have a well-defined curriculum there is a possibility of the learner and the teacher to be engaged in purposeless activity. The element of ambiguity and vagueness will be avoided if there is a clearly specified curriculum. Then, we will be sure of our base and of the direction and goal of the curriculum and its entire process. The coverage of objectives is taken care of.

Components of curriculum

The major components of curriculum are objectives, content, methods and the evaluation.

Evaluation

Curriculum has to be evaluated not only at the end but in the process also. This evaluation is of two types.

1. *Formative* : This is evaluation during the process of the curriculum function. This evaluation is most important. This will help us in correcting the deviations from the expected outcome and is a continuous process.
2. *Summative* : This is evaluation done at the end of a planned activity etc. This concerns itself with the product of teaching-learning process.

What Determines the Curriculum ?

We take certain factors into consideration that have a bearing upon the curriculum.

1. *Pupil* : We begin with the pupil as he is. We should have a fairly good picture of his needs, interest and ability. Pupil's Characteristics are the first determinant for curriculum planning and development.
2. *Community needs and expectations.* The needs and expectations of the community have to be taken into consideration since we are not merely educating the child as a learner but also as a citizen based upon the needs of the community, and as a member of a particular community. Keeping the needs or expectations of the community in view will be of help in bringing about social change. Social characteristics should be considered.
3. *Changing Society.* The trends of change have to be noticed. For example, what changes have already taken place and what changes are likely to take place are some of the important factors to be kept in view while developing the curriculum.

Teacher's participation

Why should the teacher be involved in curriculum development ? It acher who implements and translates the curriculum. It rstands pupils more than anyone else. Right from the : we need the help of the teacher because he knows the , and background of the pupils. Unless he participates in t he may not understand or accept the curriculum and may implement it in the desired manner and thus defeat its very

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:r makes a survey of the community and he obtains the community regarding the objectives of education and the ctations of the community. The teacher's views about the l be a fairly good indicator for the purpose of curriculum

ıus obtained the major determinants, the defining of the ves of curriculum and later, the stage-wise objectives of ome more clear. So in fixing the objectives we must take ' the teacher in order to know how far the objectives are ıieved. We are to see what kinds of experiences can be children to realize the objectives of the curriculum. The ·iences may be verbal, related to field work, observation, emphasis is on the overall approach of the curriculum and e. Here again the teacher comes into the picture. It is .hat when anything new is given to the teacher it is met with ıt doubtless the teacher has to be involved. The effective- ıiculum depends to a large extent on the way the teacher A workshop involving the teachers is a good idea. Here ectives and learning experiences to be provided may be ı the subject-wise areas may be considered stage-wise. : involvement of the teacher is essential. Thus teacher necessary from the planning stage to the stage of detailed ıstruction.

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curriculum is developed, groups of teachers have to ınd oriented so as to familiarize them in the overall

ıplementation some steps have to be taken in these areas :
›pment of suitable literature for the awareness and guidance teachers.
:t training
nedia exposures
tion procedures

Curriculum is a cyclic process

Plan, Develop, Implement and Evaluate the curriculum and the Instructional materials and modify their suitability.

After the teacher has implemented the curriculum for a year he can give his views on the curriculum and the instructional materials. These views can be obtained through a well-prepared questionnaire. The main points of their views can be further discussed in a seminar involving a select group of teachers, subject experts and curriculum specialists to determine the lines of action for further bringing about suitable changes in curriculum or instructional materials.

Whenever the deficiencies are discovered the curriculum has to be renewed. They may be due to the defects in the curriculum itself, deficiency on the part of either the teacher or the administration. Nevertheless, shortcomings have to be identified and changes have to be brought about so as to make the curriculum meaningful and worth-while.

Participating in the discussion Prof. K.N. Srivastava laid stress on some of the following important points which have to be taken into consideration :

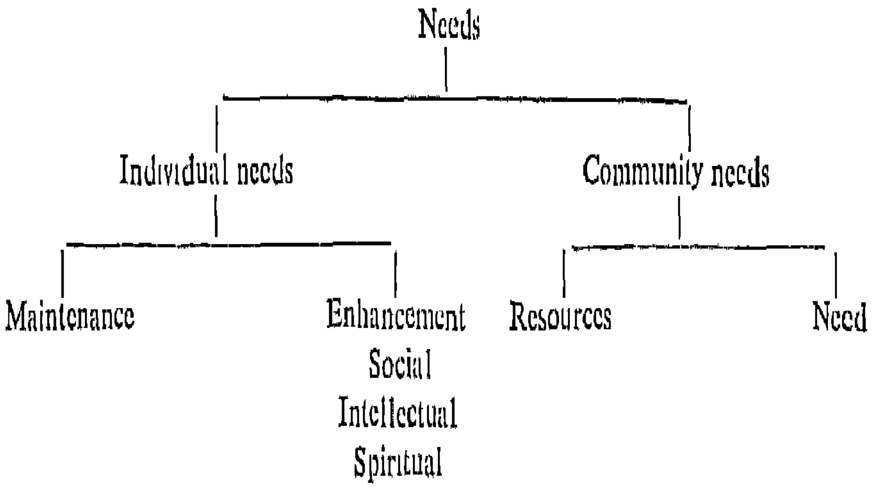
1. Bold steps have to be taken for the involvement of teachers in curriculum development by decentralising the system so that the teachers will have their say at every stage of curriculum framing.

2. *Values* : The emphasis on the middle class values should shift to the needs and values of the common man and the rural masses. It was also stressed that work-experience should be given an integral place in the curriculum. The impact of informal agencies like the mass-media is to be examined while preparing curriculum and here also the teacher's knowledge will be of immense utility.

Smt. Indu Dave supplemented by dealing with the concept of curriculum and the need for teacher involvement in the development of the curriculum.

The teacher alone should not be involved as there are many agencies providing learning experiences to the child. The teacher's present status in terms of his role and the difficulties and problems faced by him were discussed. Various aspects of curriculum development and implementation, it was suggested, should find a place in the teacher training programmes. It is also necessary to give orientation to administrators. The attitudes and values of teachers are significant factors. Efforts should be made to build in them favourable attitudes and values. The assistance to be given to the teacher should be instruction and research oriented

Curriculum development should be based upon the following model:



The role and involvement of the teacher comes only after this kind of analysis has been made. Educational courses must be analysed in relation to urban as well as rural areas.

There should be co-ordination between curricular and co-curricular activities. General education bias should be there. It is also essential that the common core should be brought out.

Special emphasis was laid on the need to develop in the child the ability of learning how to learn.

THEME V — Instructional Materials and Techniques Relevant for the Use of the Curriculum and its Implementation

MEMBERS OF THE PANEL

Dr. R. C. Das
Prof. K. N. Srivastava
Dr. (Smt.) Indu Dave

[*Instructional materials and techniques are inputs of vital significance. Effective use of appropriate instructional materials makes teaching abundantly meaningful. Text-book is not the only instructional material. With the advent of Science and technology a large number of teaching-aids with all their nuances and ramifications have come to exist. A carefully planned programme of radio and television deepens the child's thinking and widens its mental horizon. Pamphlets and leaflets for parents, instructional materials and guidelines for teachers should be prepared. Various types of suitable instructional materials including the improved ones should be carefully prepared and purposefully and cautiously used.*—EDITOR]

Dr. R.C. Das while initiating the discussion on 'Instructional Materials and Techniques for the use of the Curriculum and its Implementation' analysed the theme as stated below:

Instructional materials imply all the materials that can be used for the purpose of instruction. These should be relevant and helpful for achieving the goal of instruction. They come after decisions about the objectives and curriculum have been made.

Instructional materials for all : Suitable literature on the curriculum is essential to develop common understanding about the curriculum to be implemented. Specific kinds of literature meant for (1) the parents and the public, (2) the pupils, and (3) the teachers should be prepared and disseminated. The parents and the public are generally ignored. But they would like to understand what the school is doing to their children. A brief pamphlet explaining the various aspects like content, methods, evaluation, etc. should be prepared in such a simple way as to be understood by the layman. Conceptual literature may be prepared for the more enlightened public. Graphic materials can also be prepared to supplement the above. It is important that the people should be kept well informed.

Instructional materials for pupils

Text-books : Here in our country text-book is generally the only instructional material. But the pupils should have access to relevant and related information through books other than the text-book. Text-books may give the core knowledge which is essential for children. But a fairly rich list of other supplementary materials with additional information in the areas makes the curriculum more meaningful in gaining further knowledge and a comprehensive perspective in the area.

There should be an agency to plan and develop audio-visual and other types of teaching-aids. These should be tried out and evaluated and necessary changes should be made. Apart from supplementary reading materials and laboratory manuals there are various types of instructional aids and media such as charts, diagrams, pictures, photographs and posters, films, films strips, slides, audio-tapes and recorded discs, video-tapes, models, improvised apparatus and conventional apparatus.

There should be a conceptual analysis of curriculum in order to find out which materials are adequate and which are not. Efforts should be concentrated upon the preparation of low-cost materials.

Mass-media : Radio, television and newspapers. Here the leadership has to be assumed by the curriculum agency. The experts in the field are required to provide instruction through the radio. A considerable amount of language and Social Science may be taught through the radio. For this purpose a strong curriculum cell has to be formed in the S.I.E./S.C.E.R.T. There must be fullest co-ordination between the two. The necessary prerequisites must be taught by the time children listen and witness radio and T.V. programmes respectively. Time schedules are to be carefully co-ordinated.

The general apathy and aversion of the teacher towards educational technology should be transformed into a willing acceptance of it as a means of enhancing his teaching competence.

Self-study Materials : The present position in this regard is not satisfactory. A well-developed programme based on sequential self-study is the need. Some selected and trained teachers should prepare these materials. These may be in the form of correspondence lessons or a variety of suitable books in the library or in the shape of programmed instruction,

Materials for the teachers

Teachers' Guides in each subject of each class should be prepared. We should also develop certain supplementary materials which will help the teacher in order to upgrade and enrich his knowledge.

There should be integrated kits of materials prepared unit-wise for the purpose of effective teaching.

Teachers should be trained in the appropriate use of the materials and techniques.

Selection and use of materials and techniques

(a) The materials and techniques selected should be appropriate for achieving the objective.

(b) They should be suitable for the age-level of the pupils.

(c) They should be easily available and implementable.

(d) They should not be more costly than other alternate materials or techniques which could be equally effective (cost per pupil may be compared).

(e) Materials or techniques which reduce learning time or produce better learning are to be preferred.

(f) Certain materials or techniques can be used only if the personnel using them are adequately trained in its use.

Systems-approach in curriculum implementation

(a) Individualised learning is a must for the future. Self-learning should be encouraged as much as possible. Appropriate self-learning materials should be developed in a learning sequence and made available to pupils. Supervised self-study should be provided for.

(b) Help of teachers should be provided in supervision, evaluation and remedial teaching.

(c) Machines and other aids are to be used as and when needed for self-learning or for group-instruction.

Participating in the discussion Shri K.N. Srivastava made the following observations :

Visualisation forms an important part in developing an understanding of the physical sciences and social sciences.

The function of the instructional materials should be in relation to knowledge, understanding, appreciation, etc.

The pupils may be taken out for a camp and the local aspects studied with reference to the academic items of the curriculum. The curriculum should provide for this kind of learning.

Most of the teachers may not possess the necessary competence for developing instructional materials. This is to be developed in them. The feedback through their experiences is also essential in developing the instructional materials. Also, experience in developing instructional materials should be provided during the teacher-training programmes. In developing instructional materials the totality of experiences i.e., the classroom experiences and local experiences should be clearly kept in view. The development of instructional materials should be the result of the co-operative effort of various agencies.

Smt. Indu Dave supplemented the discussion :

Instructional materials and techniques imply the process and means of methodical furnishing of learning experiences. Curriculum should be such that it caters to the needs of all irrespective of socio-cultural differences. One problem is how to integrate the social experiences in the syllabus and how to evaluate it. For this purpose, basic knowledge of one's self and one's environment is essential. Instructional materials should be based on the above factors. There should also be an integration of basic knowledge i.e., historical, geographical, social, and environmental while developing instructional materials.

Development of aesthetic sense also forms an important aspect of the curriculum which aims at bringing out a better person.

Instructional materials and techniques are to be developed for both the core and differential curricula. Mass media techniques and supplementary reading material are to be developed and adopted in a planned manner.

Techniques and Methods : Teacher education should be radically and drastically changed. There should be education for ecstacy and education for joy. Group thinking leads to the removal of perceptual blocks, emotional blocks and cultural blocks.

THEME VI — Vocationalization of Education at Different Stages —Nature and Methodology

MEMBERS OF THE PANEL

Prof Govinda Rao
D. R. Dua

[In the all-round development of the child his development as a worker is an important factor. There should be intimate relation between the world of learning and the world of work. Development of proper attitudes towards work as also good work habits form a vital task of the curriculum. The concepts of work-experience, socially useful productive work are related to vocationalization of education. They contribute to the social and economic efficiency of the growing child. Vocationalization has come to occupy a prominent place in the field of education in the Indian context.—EDITOR]

After a brief survey of the different commissions and committees that referred to this concept, Prof. Govinda Rao said that it was only in 1976 that the Ministry of Education asked the NCERT to implement the plan for Vocationalisation of Education on the lines suggested by the Kothari Commission.

Supported by relevant data and figures, Prof. Govinda Rao brought out the imperative need for vocationalisation of education. We have a situation where graduates are unemployed while there is job potential for which there are no trained men.

Hence diversification of courses are to start after 10 years of school, 50% going to the vocational stream and 50% to the academic stream. This diversification eventually will help in reducing the pressure on the universities and in solving the problem of unemployment to a considerable extent.

Job opportunities exist in the paramedical, agricultural, dress-making and other fields. In each of these areas, a variety of courses can be identified. Hence there is need for a survey of the needs of the area, of the community, of the society on a short-term and a long-term basis, Flexibility of the duration of the +2 stage as far as vocational courses are concerned was emphasised. There are some courses which can be finished in a year while others may take 2 or 3 years.

Flexibility can be manifested in other aspects also. There should be semester system where one can study for some time and be engaged in his occupation for some time thus giving scope for learning and earning.

The possibility of students from the vocational stream to switch over to the academic stream and vice-versa is also possible after the first semester, and the deficiencies can be made up through some evening or part-time courses.

As regards assessment, there is no possibility of an external or public examination. The assessment of vocationalisation of education must be a continuous process of internal assessment.

Regarding teachers, the existing teachers in the multipurpose schools, or other post-graduates may not be suitable. There is need to exploit the resources of the community, the principle being, "he who knows, must teach." A short-term training may be considered for such local persons. The Higher Secondary schools should have co-ordinators who can combine theory with practice that is given by these experts in the field.

There is really no need for much equipment in the school, if the students can actually go to the various agencies like the factories, hospitals etc. connected with these vocational courses. Text-books are also not a great necessity. Reference books together with some cyclostyled notes may suffice.

An administrator is necessary for these vocational courses. Hence a vice-principal who is competent in the job and who can coordinate the activities of the vocational stream is really necessary for the successful implementation of the course. Moreover the possibility for the students to proceed to higher courses in the vocational stream ought to be considered, that is, a vertical mobility in the courses should be there.

Job — employment is a serious issue. There is a need to delink degrees from jobs; competency in the job should be the criterion and not the degree. Government policy decision in this direction is an essential step. Fortunately this has now been agreed to. Moreover, students who have finished their courses in the vocational stream should find admission to the apprenticeship scheme and ITI, etc.

Degree colleges should consider the possibility of having an open system by which the students of the vocational stream may take degrees through non-formal education.

For the successful implementation of this programme an inter-ministerial committee is necessary and this concept seems to be gaining favour.

The notion of having some common courses for both the academic and vocational stream is not correct. Subjects that are taught in the vocational stream must be suited to the vocational character, supporting subjects that help the vocation and not mere academic subjects.

It is needless to say that suitable, relevant type of teacher training programme that is suited to the vocational character is an absolute must. The suggestion that these teachers should be trained in the ordinary teacher training colleges with the help of the State Institutes of Education is untenable since they lack the needed competence. Moreover, skills should be emphasised rather than the 'Foundations' in different areas like psychology, sociology, etc.

The concept of self-employment is more difficult than the concept of wage-employment since the former requires brain and brawn to a greater degree. However an orientation towards self-employment is necessary at this juncture.

Shri Dua whose paper had already been circulated condensed the basic needs and requirements for the successful implementation of the scheme under 8 Ms:

1. Manual labour together with inculcation of skills, values and positive attitudes for development of the child as a learner, as an individual, as a citizen, and as a worker.
2. Money — Amount spent as national investment.
3. Men — Personnel to handle the programme.
4. Management for coordination — In this connection Shri Dua referred to the establishment of National Council for Vocationalisation of Education at the centre and state councils of vocationalisation at the state levels for coordination and monitoring the programmes.
5. Machines — Tools and equipments readily available.
6. Middle-level supervisory people to cater to the requirements of the rural areas especially when degree holders do not feel motivated to go to the rural areas.
7. Methods — Not only knowledge but also the skills and curriculum to meet the requirements.
8. Materials — To have vocational activities based on locally available raw materials.

During the discussion the following points emerged based upon the problems and questions posed.

1. The insistence of 2 years' duration at the +2 stage may perhaps be due to a misgiving that in case otherwise it would disturb the structure of education. This insistence is not necessary for the vocational stream.

2. Traditional training institutes are not suited for vocational teacher training programmes for want of expertise. Professionals with an orientation in methodology are more suitable for imparting instruction.

3. Work-experience is in a way a pre-vocational activity. Employment

should be based upon vocational competency rather than the possession of diploma or degree.

4. Admission to vocational courses should be strictly based upon the abilities, aptitudes and attitudes and not based upon the marks in academic courses.

5. Selection tests should be administered by the institution where the candidates are going to be trained.

A few points were also referred to regarding the system of grading, the distinction between vocational education and vocationalisation of education, the need for a competent administration for the successful implementation of these programmes. It was also felt that the students should have the opportunity of having vertical mobility to have access to advanced courses in the same course through non-formal methods.

National Documents on Vocationalization
-- A Critical Appraisal

Prof. Govinda Rao

1. For over hundred years, education essentially has been identified with liberal education and little attention or efforts have been devoted to diversifying it to include education with training for various occupational needs of the country. Commencing from Wood's Despatch of 1854 to the Kothari Commission in 1966 various committees have recommended, from time to time, introduction of vocational streams at the Higher Secondary stage. But a serious attempt in this direction has been made only during the past two years. For the first time a National Document was prepared by the NCERT during November 1976 after obtaining a large measure of consensus at a Conference held in June 1976 where educationists and educational administrators of different States participated. The major recommendations were:

(a) Diversification of higher secondary education to include a variety of terminal *vocational courses of various duration* to cater to the needs of a large number of students according to ther interests, aptitudes and socio-economic conditions.

(b) Flexibility in the choice of courses both in academic and vocational streams so that the students may make combination of subjects in keeping with their future aspirations either from the academic subjects or from the vocational subjects or even both to suit their inclinations.

(c) To aid flexibility of choice and duration of study, with or without training for gainful vocations, the traditional year-end system should be dispensed with and the more appropriate semester (or term system) along with credit and grading methods of evaluation should be adopted. Such a system not only provides for choice of semester courses in a variety of subjects but also aids pursuit of education through part-time, block-time courses and provides for interruption of studies when the student so desires.

(d) To facilitate change for academic to vocational studies and vice-versa, certain semester courses could be designed to be common for both so that a student can accumulate about half of the total credits for either of the two, if he judiciously selects the courses. Through bridge courses, any one who desires to change, say after a semester, can switch back to other carrying the credits in the common subjects he has already studied. However, change would have to be restricted to the end of first semester in general and rarely to the end of the second semester. A semester generally should consist of 15 weeks having 90 working days.

(e) The time allocation for the two streams is as follows:

A.	Language General Studies (Social, economic, scientific, etc.)	25% time for all streams
B.	Science, Social Sciences, humanities, including literature.	75% time for the academic stream. Students may offer courses from (C) also.
C.	Science, social science and humanities courses designed to understand the basis and scope of various vocations.	25% time of the vocational stream.
D.	Vocational and practical work.	50% time of the vocational stream.

(f) To be able to make the system more attractive and purposeful, a net-work of institutions, where further education facilities can be provided have to be created so that those in occupation and employment could pursue education/training to improve their professional/occupational status. For those who will have had practical experience of 3 years or more, certain percentage of seats should be reserved in higher educational institutions if they wish to make use of the facility.

(g) Whatever the types of courses offered, the principal aim should be that they should be relevant to the regions and their socio-economic conditions, should be able to divert a large percentage of students from the purposeless and irrelevant university education and as far as possible should reduce migration from the rural settings to urban settings.

2. To achieve the above, a meaningful planning, a system of implementaion through supply of physical and human resources, organisation, cooperation and coordination of various agencies—governmental and private—are the pre-requisites. The document, keeping these in view, further recommended:

(a) To make the vocational courses relevant to a region, the "relevancy" should be determined through a meaningfully conducted vocational survey in the said region. A revenue district is the most appropriate in our present administrative set up.

(b) Such a survey must comprehensively study the present and the possible emerging employment patterns alongwith the shortages of trained labour forces in the current vocations and what may be needed when the development schemes are completed, the types of competencies needed, their depth and quality and self-employment opportunities that might be thrown up as a consequence of anticipated developments in agriculture, industry, commerce, health education and so on. It should also locate prospective Higher Secondary schools which can start the courses when selected, their reputation for good standing and academic excellence, financial strength, infra-structural facilities, good management and competent staff.

(c) Based on the survey findings, a committee consisting of experts from prospective employers, educationists and district planners should be entrusted with the task of preparing the curricula in the selected vocations which may have good employment potential.

(d) Taking into account the depth and extent of competencies expected to be developed in the students in the selected vocations, teachers on regular and part-time basis have to be appointed. Since the vocations would be generally new, and courses have to prepare students for jobs, mere academic qualifications of the teachers would be hardly adequate. The best method of providing expert teachers is to appoint practitioners from the industry, commercial, agriculture, health and social service organizations making academic qualifications secondary.

(e) To provide adequate facilities for training in vocations is too expensive for the country in the present state of affairs. A good plan would be that the Higher Secondary schools enter into collaborative arrangements with the local farmers, hospitals, banks, industries, educational industries, etc. for practical work. The Central and State governments, however, will have to provide certain quantum of assistance towards basic equipment, library and salaries of regular and part-time teachers.

(f) At the completion of the courses, if the students desire to make use of the apprenticeship scheme, provision should be made in the Act to allow rebates in training and to fix apprentice placement. As the Polytech and ITI products are eligible for stipends so should be the products of vocational schools/colleges.

(g) To ensure good response to the vocational courses and to strengthen them, it is necessary that the Centre and State governments take steps to so change the recruitment rules that for certain categories of jobs where types of competencies possessed by these students are adequate preference, should be given to these boys and girls.

(h) Recognition of certificates and diplomas for purposes of employment in government and the public sector is a crucial issue. For determining their levels and quality, levels of employment along with scales of emoluments as also to bring about close cooperation and coordination efforts, a national apex body has to be created whose functions should include all the above plus responsibility for monitoring and determining the scales of assistance to schools. Such a body may be designated "National Council for Vocational Education" at the centre. At the state level similar councils called "State Council of Vocational Education" should also be created with the powers and functions to oversee the planning and implementation of the scheme of vocationalization.

Subsequent to this, two States, the Union Territory of Delhi and Karnataka introduced vocational streams, the former achieving a poor success and the latter doing so creditably. Meanwhile a Review Committee, under the Chairmanship of Dr. Malcolm Adiseshaiah, was set up which has now submitted its report to the Government of India. This report has recommended some basic changes which will now be considered.

3. **Recommendations of the review committee**

(a) A major departure this Committee suggested is that there is no need to recommend rigid *streams* at this stage as has been done in the first document. Since the aims is "Vocationalization of Education" and not "Vocational Education", the spectrum which is predominantly academic in nature should have a strong component of advanced "Socially Useful Productive Work" (SUPW) at the plus two stage and the predominantly "Vocational spectrum" may choose vocational study essentially for wage and self-employments.

(b) Since sufficient facilities are available for technical vocations in the Polytechs and ITIs and there is already a large section of qualified students unemployed, vocationalization should generally be confined to the major areas of occupation in Agriculture, Commerce, Health, Home Science and other services. The aim should be to prepare youth more for self-employment than wage-employment.

(c) The norm of vocationalised courses should be two years so that they are co-terminus with the academic courses. If other courses of smaller or longer durations are selected, they should be offered through non-formal education.

(d) The time allotment for academic and vocational spectrums are as follows:

	Academic Spectrum
Language(s)	15%
S.U.P.W. (Academic Spectrum)	15%
Sciences or Social Sciencies or Humanities	70%

	Vocational Spectrum
Languages(s)	15%
Foundation subjects	15%
Theory concerning vocations	35%
Practice of vocation	35%

It can thus be seen that as against 50% for vocational practice recommended by the original document, it is now 35% and SUPW replaces "general studies" of the original scheme.

(e) That so called foundation subject is now composed of Gandhian concept of Basic Education plus some general background information about the vocation the student may choose for his later career.

(f) It has spelt out in cutlines some of the courses which could be chosen by the schools/colleges.

(g) It recommends semester system where the University in that state has adopted that system; but the others may follow the traditional system of examination and award of Higher Secondary Certificate.

4. Some comments

4.1 Between the two documents, the original one seems to be better conceived and better integrated in its objectives and aims. Its main shortcoming is absence of clearly spelt out implementation scheme in operational terms. Also in recommending the semester pattern of instruction, it did not visualize the practical difficulties the schools starting vocational stream might have to face. First, the teaching community is required to have a full acquaintance with the philosophy and scope of the system. The design of semester courses, the methods of instruction and evaluation are very un-familiar to most of them. To familiarise and to make necessary preparation before launching the scheme, a good deal of publicity, initial efforts to equip the schools, appointment of suitable teachers with practical experience on regular and part-time basis are needed. Many States are in a state of confusion and are genuinely sceptical about the whole scheme.

4.2 Another major factor that the document took for granted is with regard to the teaching of languages, general subjects and core subjects. The suggested scheme was that the vocational and academic streams would have the same curricula in these subjects so that a good intermingling of the students of both could be maintained and at the same time great economy could be achieved. But what it misses is that the core subjects which formed the base for the start of vocational instruction, because of common classes, cannot be integrated in such a way that the vocational students can pursue their special subjects without difficulty. This is because the academic subjects are taught in a particular sequence and this sequence cannot be broken to help vocational courses. The net result is that the students, say, of agriculture are required to wait for the second or third semester for the study of chemistry, which their courses have incorporated. However, this is not difficult to solve if science subjects relevant to vocations are taught separately and the syllabuses are not made common.

4.3 Still another drawback is that the school which is used to a rigid system of teaching and evaluation is required to adjust all at once to semester system which permits students to pursue studies for unequal number of semesters for different courses and even permit interruption of studies, if the students so desire. The heads of schools and teachers are hardly prepared for such changes.

4.4 On the other hand, the Adiseshaiah Committee report, at best, can be considered as a patchwork on the original pattern. In its anxiety to improve upon the original document and to preserve the traditional features, it tries to mix up both and retain the basic philosophy to a great extent. For instance, its equivocal recommendation that the courses would be generally of two years' duration destroys the flexibility visualised in the original document so far as the periods of study are concerned. This is a deliberate attempt to fit the new courses into the traditional system. It would not allow shorter or longer courses to be introduced in the schools and quietly shifts them to so called *non-formal system.*

4.5 Second, using terms like 'academic' and 'vocational spectrums' is to quibble with words and putting the old wine in new bottles.

4.6 Third, the most unfortunate recommendation is to say that vocational courses in technical subjects need not be included as the existing polytechs and ITIs are hardly in a position to supply the new skills which the Industry, Commerce and Health sectors need. Rural industrialization is likely to create tremendous opportunities for the right types of technicians. Further, it glibly states that the students should be prepared for *self-employment* and instruction should be such as will make most of them *employable.* One becomes employable only when employers recognise that the products possess competencies needed by them. The schools cannot just know that the training offered is good enough for employment. The 35% of time allotted is neither adequate for preparing one with the expected level of competency nor for self-employment which demands even higher competencies together with additional attitudes and aptitudes.

4.7 As in the original document, a clearly spelt-out scheme of implementation is absent here also.

4.8 Both the documents however have the merits of providing some academic considerations for those who have to implement the scheme. A document may be a good exercise in writing. It is its implementation that finally validates the worthiness of the document.

4.9 It is however very encouraging that the Central government has considered vocationalization as a priority issue and has made substantial financial allocation for its implementation in all the states. Many states have gone ahead in conducting district vocational surveys and setting up task forces. Karnataka has introduced vocational courses in 21 vocations in 13 Junior Colleges and has enrolled 1033 students. The first batch will be coming out in April 1979. The Union Territory of Delhi has enrolled about 700 students in about 20 schools who will also be in the employment market in 1979. Gujarat and West Bengal also have introduced their own brands of vocational stream. Tamil Nadu will be launching the scheme from this session. It is hoped that the Centre and the States will intensify their efforts to introduce vocational streams on a much larger scale from this session.

Vocationalization of Education and Strategies for Effective Implementation

D. R. Dua

Introduction

Vocationalisation of education is different from technical/vocational education imparted in the ITIs, Technical Higher Secondary Schools, Agricultural or Industrial Polytechnics. To put it differently, it embraces all those aspects of the educational process "which involve in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in the various sectors of economic and social life". (UNESCO Report of 1974) Understood in this broad perspective, the dichotomy between education and work plaguing our educational system is sure to crumble. To lend meaning and relevance to education a major transformation in our educational system has been long overdue and serious thinking has been done in that direction only in recent years. The Report of the Education Commission (1964-66), the national documents—"Curriculum for the 10-year school: A Frame-work" and "Higher Secondary Education and its Vocationalisation", the Report of the National Review Committee "learning to do" are cases in point. To relate education to life-needs and aspirations of pupils and to national productivity, vocational awareness and readiness should permeate the school curriculum and be linked to vocational preparation at the end of the higher secondary stage. While work education or socially useful productive work will lay the foundation, vocationalisation of education at the higher secondary level will prepare 50% of the learners for vocation, particularly for middle-level supervisory jobs. Vocationalisation is intended to increase trainability as well as employability of the learner through the development of his intrinsic qualities for work in the fast changing world which are not often stressed in the vocational training organisations.

Vocationalisation of education will therefore prepare for some skills without any guarantee for providing jobs to millions. Hence imparting training for self-employment constitutes a vital aspect of vocationalisation at the higher secondary stage.

Linkage is another aspect considered essential to make technical and vocational education at the secondary stage effectively terminal such that there are facilities to diversify suitably to cover large number of fields such as: (a) Agriculture, (b) Industry, (c) Trade and Commerce, (d) Medicine, (e) Public Health, (f) Home Management, (g) Arts and Crafts, and (h) Management and Secretarial training.

The cardinal aim of vocationalisation of education, it may be asserted, is to ensure an integral development of the personality and not the development of a mere technician or mechanic.

Action plan for implementation

Vocational culture

Traditional and cultural forces actively shape the national occupational structure. Social values are the resultant effect of traditional and cultural forces. Vocational culture (presumably to take the place of academic culture, which has hitherto dominated our social values) is required to be built up and socially useful productive work/vocational activity introduced for the purpose. This will raise the status of vocationalisation of education in the country and most of the students would opt for vocational streams rather than the academic streams as is happening in developed countries now. The school is an appropriate place to develop these attitudes. However, the Sub-Group (Rural Sector), of the Working Group on Vocationalisation of Education has recommended that the status of vocationally qualified students be raised in order to allay the fear of those who choose to go for vocational education. The impression that the students who are admitted to academic streams belong to a superior class and therefore, are suitable for higher education in the universities will have to be removed and this social evil creating barrier between so called 'more intelligent' and the 'less intelligent' weeded out once and for all.

Investment in vocationalisation

The Working group opined that the amount spent in this connection should be considered as an important national investment as it will achieve good dividends in the long run. If we have to reshape academic culture optimum investment on vocationalisation of education is essential. Better utilisation of existing facilities such as those in the multi-purpose schools, secondary technical schools, senior agricultural schools and extension training centres is called for. A beginning can be made by starting vocational streams in the existing schools where facilities such as, classrooms, laboratories, libraries, playgrounds etc. can be put to fuller use. The existing Boards of Secondary Education could control these courses till some departments at the state and national levels could be set up exclusively for coordination, control, supervision and qualitative improvement, etc.

Involvement of voluntary organisations

Involvement of the community, and the utilization of additional resources, linkage of related institutions and the implementation of government policy for providing vocational facilities and job opportunities are necessary. Coordination at the level of consumer ministries and the voluntary agencies is equally important.

Business and industry collaboration

In order to get clear feedback to assess human power requirements and personnel needs it will be advantageous to involve the representatives of business, industry, farm, health, labour and social services and to link them with the technical/vocational secondary schools, as ultimately it is they who are to be the consumers of the products of these institutions. To invite private investment to the rural sector, the Government of India has already formulated guidelines for the approval of programmes of rural development. These programmes will entitle them to tax concessions. There are 15 areas to be earmarked for these purposes. These include establishing and running of educational and vocational training centres, rural electrification, construction of houses for the weaker sections, minor irrigation schemes, supply of seeds, supply of fertilizers and insecticides, animal husbandry, assistance to small and marginal farmers, establishment of workshops for servicing, repairs of farm machinery and training of artisans and mechanics.

Urban and rural needs

It is quite apparent that the problems and requirements of the urban areas are different from the problems and requirements of the rural areas. The district level surveys conducted by the Ministry of Education have revealed that the vocational requirements vary from state to state, district to district, block to block and village to village. This factor must be kept in view for identification of vocations in schools in particular areas.

The integrated rural development strategy has come to be accepted as an effective strategy of development by most of the developing countries, which may be tried out in our country.

Strategies for effective implementation

I The National Review Committee and the Working Group on Vocationalisation of Education are unanimous in the recommendations regarding the making of preparation and implementation to go hand in hand.

II. The National Review Committee has recommended two streams as suggested in the national document prepared by NCERT, as
   (a) General Education Spectrum; and
   (b) Vocational Spectrum

It is, however, recommended that there be no rigid streaming of courses into 'general education' and 'vocational education' spectra.

III. The recommendation on streaming takes cognisance of the elective models. Three models in the offering of elective subjects by the schools envisaged for implementation are :
   (i) Those offering only General Education Spectrum and its elective subjects;
   (ii) those offering only the Vocational Education Spectrum and its elective subjects; and
   (iii) those offering both General Education and Vocational Education courses and their elective subjects.

IV. Both the National Review Committee and the Working Group on Vocationalisation of Education are unanimous on the issue of vocational services at the block, taluka, district, state and national level, to identify the vocations and the manpower needs of the rural and urban schools before launching the scheme.

V. The pattern of vocationalised courses recommended by the National Review Committee is as follows :

Courses	*Time Allocation*
(i) Language(s)	15%
(ii) General Foundation Courses	15%
(iii) Elective Subjects	70%

VI. The course content comprises two parts. Part A contains the Gandhian concept of education, agriculture in the national economy, various aspects of rural development, problems of urban slums, health, hygiene and sanitation. Part B contains small scale and cottage industries, cooperatives, and credit facilities, marketing, sales promotion, various aspects of unemployment and manpower utilization, human relations, exposure of world affairs and changing pattern of education, etc.

VII. 70% of the weekly hours of instruction is allocated to the teaching of vocational elective subjects—with 50% practical work.

VIII. Various broad-based vocational courses linked to agriculture and industry and other allied fields have been suggested by the National Review Committee.

IX. The Review Committee has also suggested that counselling and placement officer be appointed in clusters of 3 or 4 schools, particularly in rural areas to start with, to advise students on the choice of elective subjects.

X. With the introduction of socially useful productive work and community services as compulsory and integral part of education at the Higher Secondary stage for all students offering general education and the launching of vocationalised courses, there is need for reorganisation of teacher education. "Unless the teacher is prepared by way of pre-services and in service education to take up these new challenges of education, the objective of the +2 reform will be a non-starter".

The Review Committee has therefore recommended that both pre-service and in-service teacher education should be so organised as to bring about the proposed changes at this stage of education.

These exhaustive guidelines provided by the National Review Committee merit serious consideration at the state level. The most important thing for the successful implementation of vocationalised courses is a proper understanding of the scheme, proper planning and resource mobilization.

THEME VII — Curriculum for Rural Development

MEMBERS OF THE PANEL

Dr. M. S. Mehta
Prof. H. B. Majumdar

[*'Rural development' and 'education for rural development' are not one and the same thing. The former is a popular concept whereas the latter is a recent one. The discussion has highlighted the importance of education for rural development in our country.*- EDITOR]

Initiating the discussion Dr. Mehta stated that presently a number of rural development projects have been undertaken to reach the weaker sections of the society. It is necessary to connect education to them. There should be an integrated approach to rural development.

Dr. Mehta then explained the philosophy underlying the foundation of Seva Mandir, Udaipur and said that the emphasis here is not on rural development so much as on education for rural development. Rural development will not be stable if done only by a spirit of social work, enthusiasm, sense of charity and generosity. Development will become stable only when rural people are made to participate in the developmental activities of their villages. This means that developmental processes become inbuilt and less dependent on external agencies of decision making.

He suggested a number of ways for an effective education for rural development.

1. Rural folks must be taken into confidence and be encouraged and educated to participate both in policy making and implementation.
2. A majority of rural people lead a life at subsistence level and their activities do not go beyond efforts at satisfying the physical needs. It is necessary to organise activities through which their energies will be directed into constructive and creative channels.
3. Pre-school education, though looks like a luxury, is a must for rural children in the age-group 2½ to 6 years. It may be of a simple and crude type where a young woman gathers the children under a tree

and engages them in play, song, etc. What is important is the group life.

4. There must be an extensive programme for non-formal education. At the moment there is no difference between rural and urban schools. This has resulted in a lot of wastage and stagnation. The timings and structure of time in the village school should be changed to attract children and retain them. A poor parent vitally needs the services of the child either at home or on farm.
5. Education for rural development must include adult education especially for men and women of middle age group. The materials and activities should be such that they receive it of their own accord without any efforts towards deliberate inducements.

Rural development is a very important and delicate issue. It needs thousands of devoted workers and millions of rupees. Unless the government develops a new procedure for official work, which must be radically new and simple, and unless they associate non-governmental agencies, tangible results cannot be achieved in this area.

Prof. H.B. Mujumdar participating in the discussion analysed the issue of education for rural development.

1. Rural development is different from rural reconstruction. Rural development presupposes the existence of some basic infra-structure in the life styles, culture and values. Therefore, it is necessary to have conservative and progressive functions in the curriculum for rural development.
2. Rural development will mean total integrated development of rural life and rural society, not only development of a specific or particular aspect of rural life. In this respect we may call the "Samajik Gram Seva" concept of Gandhi and Tagore's Rural Development scheme as a community development concept. The underlying spirit of this integrated development is "development of communities through community activities." While determining curriculum and its process of implementation this may be considered as the guiding principle.

Search for a curriculum

The generally accepted four components of a curriculum for 'national development' should also find place in a curriculum for rural development.

1. Literacy
2. Numeracy
3. Work-Experience (or technicracy)
4. Social service or education for citizenship.

Due provision should be there for variations according to the specific needs of students and the environments in which the educational programme operates. It should be seen that in the process of change and

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Due provision should be there for variations according to the specific needs of students and the environments in which the educational programme operates. It should be seen that in the process of change and modernisation, tradition and modernity will not exert pulls in opposite directions, compelling the society to remain where it is or to move backward.

In our search for a curriculum for rural development we may find two significant experiments in education still relevant for our times.

In Tagore's Sriniketan, children were drawn from rural areas. 'Work', 'Self-help', were given a place of importance. 'Problem Solving' and cooperation were deemed as fundamental approaches in the learning process. Alongwith academic studies learnings geared to better occupational and craft proficiencies and folk culture were also included. The aim was to develop the art of living socially and cooperatively. These children as they grew up, it was hoped, would be potential change agents.

On a much larger scale we have another historic experiment in Basic Education, which envisages creation of a non-exploitative, cooperative social order based on social justice. Productive work, community living and cleanliness programme and self-support are at the hard core of the Basic education programme. Gandhiji meant that this type of education would develop the child, improve rural life and the productive processes.

In our search for a suitable curriculum for rural development we must draw guidelines from these two experiments. The curriculum should aim at the purposes and goals and should not permit itself to being labelled as 'inferior'. Else it will be met with rejection. The curriculum for the rural child should be need-based, challenging to the learner and should have academic and cultural components. While urban and rural curricula are purported to suit the needs of the respective areas, there should be some inter-relation between them so that there is no alienation between the two groups. This should enable the children to smoothly fit into either of the two or both environments. This two-way traffic would call for evolving a variable curriculum with a common core, responsive to both urban and rural needs.

The present scene bears evidence of dis-integration of rural life due to the impact of modernization, urbanization and industrialization. To arrest this process and positively develop the rural areas education alone is not a sufficient means. There should be an integrated approach involving the economist, the social scientist and agents or various developmental activities. We are now, fortunately, proceeding to think on these lines. Attempts are being made to improve the rural model in all its various facets.

Science, industry and technology are given some rural orientation for this purpose. Universities are opening departments of 'Rural Development'. It is expected that their products would be suitably equipped for service in the field of rural development.

A curriculum for rural development should have two components namely those of "knowing and understanding" and "participating and doing". Apart from knowing the rural setting and the developmental programmes around it the student should also participate in such appropriate programmes according to his capacity. This is not meant as a 'service' but this would help him to grow. At a later stage such a child would become 'service'-oriented. Children should be enabled to decide which aspect of their learning would be helpful in solving a community problem. "Decision making" and "Problem Solving" should receive high priority. The students should know the values that guide in the preservation and change aspects of rural life. They should cooperatively and creatively work with other agencies of change.

Community-oriented education can be fruitful only when an institute becomes an integral part of the community. Even if the institute is given to the community by an outside agency, the community feels a sense of belonging to the institution. The teacher has a major role in giving shape to this concept of a 'Community School'.

Formal education should be supported by 'Non-formal' education for the purpose of rural development. It should provide 'functional literacy' and enhance the vocational and occupational competence of the rural adult This should develop in him an awareness of the community problems and competence to solve them co-operatively. Non-formal education with a curricular structure of formal education and formal instructional techniques and procedures is not likely to yield results.

THEME VIII — Curriculum Research and Evaluation

MEMBERS OF THE PANEL

Prof. B. K. Passi
Prof. N. Vedamani Manuel
Prof. H. S. Srivastava

[There is a gulf of difference between educational research of developed and of developing countries. Any research in the field of curriculum development in India must be in the context of Indian conditions only. The developmental activities in the education must be common with the developmental activities in the field of industry (agriculture and in any other field) of a developing nation. 80% of our population lives below the poverty line. Ours is a country with multifarious problems. Hence our research in the field of education must pertain to rural and weaker sections of our pupils, to elementary education and to formal and non-formal education. Curriculum research on the whole is a co-operative effort.—EDITOR]

Prof. Baqer Mehdi in his introductory remarks said that research is usually talked from above, at high level. But in a country like ours, it has to play an important role in improving the quality of education. It is to be field-based and action-oriented. He also stressed the need for keeping our feet on the ground while doing this exercise. The teacher's role in conducting research and evaluation regarding the curriculum in transaction is basic and we must think about the type of research in which even a primary school teacher in a remote area can participate.

Prof. Passi while initiating the discussion stated that researches in the curriculum development must be in the context of Indian conditions only. The educational researches undertaken in developed countries differ from those of under-developed countries. In developed countries, development of the country and advancement in the field of education go side by side. In fact, the development in the fields of agriculture, industry, etc. are the basis for educational development. But the situation is quite reverse in India. We first talk of education, and then we want the educated men to improve the condition of the nation. Because of this downward infiltration view, the consumer usually feels that education is not relevant. Our model for curriculum development is like that of industry—heavy industries first and then small industries.

In the post-independence period a number of plans were implemented and then given up without being given a fair trial. Basic education, multi-purpose education, 10+2+3 pattern are some examples. Idealists, intellectuals, politicians are to a large extent responsible for this state of affairs. We have a variety of approaches for providing learning experiences. But we do not have a clear idea of which to select for which purpose. Reflective thinking is of great help in this aspect. Action research has a key role to play. All the functionaries of education should be oriented in these aspects to enable them to make suitable procedures, aids, etc. Training colleges too have to play their role in this area.

The contribution of institutes of national level in the field of curriculum development is not much and is performed in an isolated manner. Research studies generally do not have practical bearing on curriculum processes. The NCERT has started doing some work in this field. We do need research studies at the institutional level. In this regard two major documents may be mentioned—

1. Third year-book of NCERT
2. Survey of Research in Education 1972-73.

The surveys in these documents are conducted by individuals. The area of the studies is geographically small Only about 2% of them are of experimental nature. The studies in the area of curriculum are very scanty. The effect of the sputnik on the educational policy in the U.S.A. is well known. Our country does not exhibit similar trends of reaction to major changes taking place in the world.

The need of the hour is to concentrate our research efforts in the field of education related to the rural, urban, under-privileged sections, elementary single-teacher school, formal, non-formal components. What we need is not research about the disease of an individual but on the pathology of it. We need a clear perception of our problems and research of an utilitarian nature on those problems. Felt needs like the use of local resources, preparation of low-cost aids, etc. should determine the priorities in research in curriculum development.

Prof. Passi then gave a detailed account of the innovative experiments pertaining to science education being conducted at Hoshangabad in Madhya Pradesh and at the community science centre at Ahmedabad (Gujarat) where concepts are developed through new approaches without the help of the traditional equipment.

It was reiterated that research in curriculum development should be based on realities in the Indian context.

Prof. Vedmani Manuel continued the discussion and elaborated on the 'what' and 'how' of curriculum research. Curriculum research always respects:

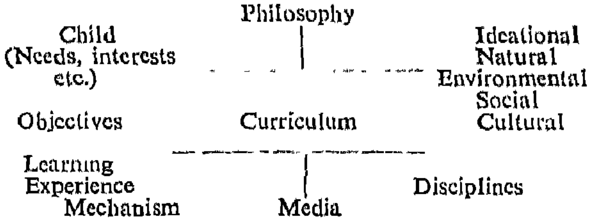
qualitative factors as much as the quantitative ones,
particulars as much as generalisations,
function as much as structure.

A man of chemistry or physics can say that certain things happen under a certain set of conditions. But in case of educational research, it is not possible. Conclusions are not certain. Curriculum research is not necessarily the sole function of a specialist. It is a cooperative effort. It is also the function and effort of the practitioner as also of the on-looker.

Educational research is not exploitative. Both brain and hands need be used on a cooperative basis.

Curriculum research is multi-disciplinary in nature. It respects both 'unsystem' as well as system. Unsystem is some thing like swimming in the sea and not in a swimming pool. In the former case, there are too many influences, there is a combination of operations having too many variables. Some times changes come in the middle too. It can be a fluid enquiry or a solid enquiry.

The different components of curriculum research can be symbolised as follows :



Priorities regarding the areas of research in curriculum cannot be given as such. They have to be chosen as the need arises. However the following few can be suggested.

1. What should be the basis for planning and development of the curriculum ?
2. How to adopt a given curriculum to different conditions ?
3. Whether the curriculum should be organised on disciplines such as physics, chemistry, biology, etc. or activity-oriented—which one fits at which place ?

Research in the field of education and more so in curriculum development is very essential. This can be taken up at different levels by different persons or agencies—

Prof. Srivastava enumerated four types of curriculum. They are :

1. Curriculum of home
2. Curriculum of immediate environment
3. Curriculum of peer group
4. Curriculum of school.

The fourth, the last one, the school curriculum is the most easily manipulable. Usually it is treated as the sole curriculum.

The following are in brief the stages in the curriculum.

1. Planning—During this stage a number of factors are to be considered including the political and economic systems of the country.
2. Development—At this stage, factors such as content, materials, methodology, evaluation of each of these are included.
3. Experimentation or try-out.
4. Finalisation
5. Implementation
6. Review
7. Renewal—this is a continuous process.

Evaluation is basically concerned with two of the above, namely, experimentation and review.

Discussing about the persons that are to be involved in this operation of evaluation Dr. Srivastava classified that all the persons are concerned at one level or the other. But usually, in practice, in many of the states it is the business of only one person who will be usually an expert from the University.

Child is the centre around which eight different agencies react mutually. These collaborators are 1. Curriculum expert, 2. Teacher, 3. Educational Psychologist, 4. Educational Administrator, 5. Pedagogue, 6. Socio-economic expert, 7. Content expert and, 8. Evaluation expert. All these collaborators have some role in curriculum development as well as in curriculum evaluation.

The basic elements of curriculum may be classified under the following headings:

1. Objectives.
2. Content, matter and materials.
3. Methodology.
4. Evaluation (Procedure & Practice).

From the stand-point of the teacher aspects of curriculum evaluation may be pin-pointed as follows:

1. Relevance to the needs of the child and the group.
2. Achievability of objectives in terms of the child as a learner, person, worker and citizen.
3. Built-in flexibility.
4. Difficulty level of the content.
5. Appropriateness of time factor so as to complete the syllabus.

6. Linking the previous and present levels of achievement of pupils.
7. Learning experiences provided.
8. The environment around the child.

At the end he requested the participants to elaborate the model that was suggested by him and to develop it further by suggesting at least four aspects of evaluation to be done pertaining to each collaborating factor.

Prof. B K Passi continuing the discussion explained the two types of evaluation i.e., formative and summative.

The evaluation done when curriculum is in action is called formative. The teacher will be doing this type of evaluation when he will be using text-books, instructional materials, etc. in his day-to-day work. The purpose of this is to see that the curriculum is functioning properly. If something is wrong some-where, it helps us to know about it so that it can be corrected. It is continuous and helps in the improvement of the teaching-learning process.

Summative evaluation is done at the end, when the task is over. It is taken up to assess or label it at the final stage.

Evaluation can be taken up at two more levels.

1. Micro level — Pin-pointed questions are put during the formative stage so as to improve the teaching-learning situation - to be done at individual level by the teacher in his class-room situation,
2. Macro level — Asking very broad questions after completing all the stages. This type of evaluation can be taken up by larger institutions having adequate men and material for taking up this task.

The criteria for evaluation to be used may be of three types—

1. Immediate; 2. Intermediate; 3. Ultimate.

It is difficult to classify them very rigidly. Certain items coming under the first category may fit into the next one too.

Research and evaluation may also be conducted in order to find answers to the question: "Which component etc. of the curriculum develops the competencies of the child as a learner, person, worker and citizen?" The data obtained by many agencies in evaluating the curriculum can be used by planners, by teachers and all those involved in curriculum-making to improve the curriculum.

SECTION VI

GROUP REPORTS

GROUP I

Curriculum Development in Social Sciences at the Primary and Secondary Stage

MEMBERS

1. Dr. G.L. Mandal (Bihar)	*Group Leader*
2. Shri J.C. Dutta (Tripura)	*Member*
3. Smt. Kamala Radhakrishnan (Tamil Nadu)	,,
4. Shri Yogendra Kumar (Haryana)	,,
5. Shri Vijay Kumar Patenakar (Goa)	,,
6. Shri A. John Louis (Pondichery)	*Recorder*

Formulation of national goals in teaching social sciences

Back-ground

India is a unique country and so are her problems. It is a sub-continent, as geography writers fondly call it. The geographical factors determining the variegated aspects of this vast bewildering country are formidable.

Added to this is its thousand years old history, chequered and colourful, but disconnected and scattered. The plains and hills of India are littered with dilapidated forts and monuments. Great kings and emperors, despotic and autocratic, as any other kings in the ancient world, ruled the different parts of Hindustan, built magnificent palaces and temples of incomparable beauty, while millions of their subjects wallowed in abysmal poverty, lived in dens of penury and want.

India's cultural traditions, habits, superstitions and beliefs are equally strange, stifling, suffocating and strangulating. The finest flowering of Indian culture as well as the meanest of human behaviour can be found blended together in a strange amalgam, that would defy any categorization.

India has been the cradle of many religions. Great sages and saints have successively lived and preached wonderful truths to all Indian genius has assimilated all these teachings, deified the to religions, built huge temples of worship and have totally for essence of their teachings. To-day we countenance a conglom a tradition-bound society, lost in ritual and black magic, da superstitious beliefs that stand in total contrast to what the saints have told since the days of Buddha.

India's problems get sharpened from the linguistic poi There seem to be as many languages as there are people in thi The language barriers that have built mental walls of resis separation seem at the moment to be formidable and insurmoun

The strangulation of casteism, that is so rampant tends to nation into fragments even within a homogenous, linguistic group. Its hold over the people is menacing, frightening and in that unless a cultural revolution of gigantic proportions sha entire nation, redemption seems to be very remote.

India's poverty is equally unique. It has no parallel in any world. The magnitude of this problem has taxed the ingenu rulers. A nation that starves cannot work and produce anyt cannot teach anything to hungry emaciated children.

This ancient land of ours is to-day a nation in transitio nation on the move after millenmium of stagnation and iner fast developing country. The metamorphosis is slowly and im taking place. The process of change has generated its own Mass migration of people towards cities, has commenced. Old crumbling down. Urban people are fast losing their moorings. easily swept off their feet by the glamour and glitter of city despite the swelling of the city population, India will contin predominantly agricultural country with millions of Indians l countryside. Educationists have to take into account the alienation taking place in our cultural milieu resulting in te conflicts. The teacher has to aim at the synthesis of the old a the ancient and the modern and the traditional approac scientific approach.

Our national objectives, therefore, should cater not only t of the urban elite, but to the teeming millions of the rural-ba The socially backward, the economically backward, the weak handicapped, the tribal and the socially disadvantaged secti people, where the winds of change have not penetrated—all kept in mind while framing and formulating the curriculum.

Problem

Educationists are confronted with the task of producing a for such a country, with such unique characteristics.

Despite the history of the past we have to consider ourselves as one people in the future. Out of such divergencies and bewildering diversity, the concept of one nation, one country, one people has to be built in the minds of Indians.

Despite the co-existence of numerous conflicting religious faiths the spirit of tolerance and understanding has to be inculcated into the minds of the people.

The Indian, sunk in superstitious beliefs and buried under the debris of an over-burdening tradition has to be rescued and brought out to breathe the sunny air of free thought and science.

The child of to-day and tomorrow has to be urgently freed from the throttling influence of castes and creeds that divide and fragment this nation so completely and tragically.

Finally, out of the feudal and parochial past, a nation dedicated to democratic socilistic and secular ideals, should be moulded.

Objectives of teaching social sciences at the primary and secondary stages

The aim of the primary stage schools is one that weans the child from home, extends his social horizon, helps him to get used to the busy life of the school and above all prepares him for learning. The secondary school on the other hand has the task of weaning the child from the familiar life of the school to the world of work and life beyond the school.

Social Sciences include history, geography, economics, civics, political science, anthropology, sociology, psychology, ethics, and jurisprudence. If all these are taught in the right perspective the development of the child as a learner, as a person, as a citizen and as a worker would be materialised.

Objectives of social sciences

1 To inculcate in the students an understanding of the processes and forces of change which have shaped human societies to their present stage of development.
2. To help the pupils to appreciate the common factors of various civilizations and the basic unity of mankind.
3. To foster and develop the critical faculties of the child in relation to the contemporary social, economic and political problems.
4. To develop an abiding love for ones own country; to appreciate and understand the rich heritage of the past and a desire to preserve and foster the good aspects of one's culture.
5. To awaken in the pupil a proper awareness of his social and geographical environment.
6. To imbibe and develop social virtues that make a man trust and love

his neighbours.

7. To understand man's achievement in creating a better and the cause for its failures in certain aspects.

Objectives Primary Stage

1. Acquisition of knowledge through observation.
2. Acquisition of habits of co-operative behaviour, with family and community.
3. Development of social awareness towards the weaker sections of the society, and towards other living beings.
4. To foster a desire to understand that differences in the of the people are due to basic geographical factors s land, natural vegetation and their heritage.
5. To develop a love for one's own country and in the people.
6. To sharpen the understanding of the present-day event the historical past.
7. To promote an appreciation of the art, music, an wonders of our country.

Objectives- -Secondary Stage

1. To foster among the students an appreciation of th made by various cultures to the total heritage of mank
2. Analytical study of Indian history in relation to the ge mankind.
3. An intelligent understanding of the interdependence o and the society.
4. To appreciate the services of world organisations fo nations and for the preservation of man's cultural heri
5. To help the pupils to identify the interrelationship bee man, and man and his environment.
6. To develop an awareness in the pupils of the rapidly lation and its impact on the society.
7. To develop a knowledge of the importance and need tion of resources
8. To promote the values and ideals of humanism, secul and democracy.
9. Finally to widen the awareness of the child of his pla in relation to the content of the technological advar space age.

The essential elements in the content of Social Sciences

(i) Since classes V, VIII and X are terminal classes for of students, it is necessary to develop self-contained courses of study for each stage, and at the same time the courses should be such as to lay the foundation for each subsequent stage. While following this principle repetition of topics should be avoided.

(ii) Content areas are to be organized so that courses of study do not become heavy and unwieldy.

At the elementary stage (Classes I to V) social sciences should form the part of environmental studies. Integrated approach at this stage should be adopted. Instead of giving the pupils miscellaneous and unrelated bits of information in different subjects it is far better to provide a co-ordinated programme of social sciences centering around man and his environment The syllabus should be left open for I and II Classes permitting the teacher to evolve his own curriculum keeping in view his local conditions, only guidelines may be provided.

At the lower secondary stage each subject should be presented in an integrated and sequential form. In dealing with history stress should be made on historical movements rather than on the individual tales of kings and queens. In civics practical aspect of citizenship should be incorporated. In geography the regional approach should be given more prominence.

At the upper secondary level (IX and X) emphasis should be on the same approach that was adopted at the lower secondary stage, the horizon of child's thinking with regard to his physical and social environment has however to be widened.

Effective use of community resources for the teaching of social sciences

Community resources can be classified into the following categories:

(a) Natural community resources such as rivers, seas, mountains, climatic conditions, rainfall, etc.

(b) Economic community resources such as agriculture, industry, factories, dairy farm, distilleries.

(c) Cultural Community resources such as music, dance, drama, exhibitions, literary activities, physical activities etc.

(d) Social Community resources such as gram panchyat, post office, railway station, bus-stand, airport, library, associations, clubs, cinema, exhibition, radio, T.V., etc.

(e) School community resources such as N.C.C., scouting, girl-guides, cubs etc.

Utilization of community resources

In utilizing the community resources the following aspects should be borne in mind.

(a) Pre-planning

(b) Definition of purpose
(c) Teacher-pupil planning
(d) Judicious use of the resources
(e) Teacher-pupil evaluation.

Field trips, excursions and other exploration of the environment form an important part in utilizing the community resources. School children should be exposed to the resource visitors such as postman, stationmaster, postmaster, fireman, policeman, merchant, doctor, farmer, etc. Field studies by children should be promoted. For example, housing construction, farming, dairy farming, transportation, communication facilities, markets local government, health services, etc.

Projects like clean-up drives, improving safety regulations, planting trees, organizing children's museum can also help to widen the child's mental horizon.

Finally, the study of history, geography and civics can easily be linked at the primary stage with the study of the environment. The resourceful teacher can utilise the whole environment around the child as the class-room. From the environmental approach the teacher can gradually expand the horizon of the child towards the world environment.

The role of the teacher in teaching social sciences

The role of the teacher in teaching social sciences cannot be minimised. He acts as a major agent in unfolding and exposing the environment to the growing child. He is the prime interpreter of the social environment to the child. He is the potter who shapes and moulds the child, his attitude towards his elders, neighbours and the society at large.

The teacher has to be an ardent worker, a resourceful person and an honest man. He has to have an imaginative approach in the judicious use of his many resources.

He requires faith in what he imparts. He has to realise that education has given in his hands a major instrument in transforming the social milieu. The teacher has to be ever prepared to undertake new experiments, apply new ideas in the daily discharge of his duties. It is imperative that he not only knows his pupils but he knows the social background from which the child comes and the community in which he lives.

The teacher of social sciences has to be receptive to new ideas and thoughts. He has to keep himself abreast of the latest thinking in the field of education and he ought to discard outmoded ideas that are inimical to the interest of the child.

Finally, a successful teacher never tries to impose his personality on the child, never dominates in the class-room, never intimidates the helpless children but guides them as a friend and philosopher to the sunny summits of knowledge.

He sharpens the critical faculties of the child so that the spirit of inquiry is inculcated to such an extent that the students instead of answering the questions put by the teachers themselves put searching questions that may sometimes and baffle, embarrass the teacher. That teacher is the best one in teaching social sciences who creates a successful situation and eliminates himself completely from the scene.

Assessment and evaluation in the teaching of social sciences at the primary and secondary stage

At present the written examination is the dominating tool to test the academic achievements of the pupil. It is utilised arbitrarily to declare a pupil successful or unsuccessful in the examination. This banal system of examination is however giving room to a better evaluation technique.

Evaluation is a continuous process to assess the cognitive, affective and psychomotor achievements of the pupil.

At the primary stage the acquisition of knowlenge is not as important as the need of observation and maintenance of continuous assessment of the development of the social skills, attitudes and values of the child. It is most impoitant to expose the child to the environment through which the child imbibes certain knowledge and attitude imperceptibly. In other words, knowledge is caught by the child and not taught by the teacher.

Even at the secondary stage the same method of assessment and continuous evaluation should be adopted. More emphasis should be given to the objective type and short answer questions and on the semester system rather than on essay type questions.

Problems and issues

Education is now engaged in preparing the child for a type of society which does not yet exist. The selection and design of content in social sciences for equipping the child to live in the society which is yet to emerge is no easy task.

In selecting instructional content for different sub-stages of education the mental development of the learner from the age of romance through the age of precision to the age of generalization should be the major consideration. Romance arouses curiosity, a genuine enquiry into the subject which forms the basis for the acquisition of facts. They are marshalled to formulate generalizations.

Social Sciences like other positive sciences should be considered as open phenomena where conclusion is always tentative, subject to further verification and exploration of knowledge.

In dealing with controversial issues in social sciences, particularly in history, great care and caution should be taken to present a variety of data and a true perspective so that an objective total picture can be constructed. As truth cannot always be ascertained, objectivity on the basis of available data needs to be stressed.

Generally, Social Sciences are held in lesser esteem than positive sciences in the present-day subject hierarchies. The main reason of this may be that our teaching makes little effort to relate class-room knowledge to the usual practice of social sciences, where enquiry, observation, sifting and collation of evidences, categorization, objective assessment and relating evidence to conclusions are the recognised procedures. In this connection it will not be out of place to suggest that the process of learning at every stage should be assessed and evaluated. The dichotomy will crumble as soon as our instructional strategy is radically modified and brought in tune with the nature of the subjects. The child should be led and exposed to the source directly to collect evidence and discover the problems.

To frame a new set of values to be brought into the school system through social sciences is no easy task for a developing society which is in a flux. Great care should therefore be taken to cherish values in the curriculum so that conflicts between national goals and goals of international communities may be avoided.

Some innovative practices in the teaching of social sciences:

The immediate consumers of education should be taught a few and fundamental ideas in different combinations for understanding while the producers should be given enough freedom to experiment with innovative ideas and practices to illuminate the social science curriculum. A very heavy demand is generally placed on teachers in curriculum innovations which require teachers to play new roles, use new techniques and handle new materials. Without motivating the teachers the innovations may fall through at the implementation stage.

It is sincerely felt by this group that the N.C.E.R.T. or the SCERT's of the various states have done precious little in providing instructional materials like source-books and guide-books in social sciences for teachers This group suggests that this gap should be filled urgently lest the neglect of this aspect should lead to the postponement of the achievement of certain social and national goals which could be attained only through the proper study of Social Sciences. Similarly this group is of the view that intensive in-service training should be given to the teachers of Social Sciences to reorient them towards the new objectives that we are planning in our curriculum.

Open-air sessions should be tried out to enable the pupils not only to explore the situation but also to get first-hand information of the environment. This, however, involves careful planning.

Self-learning forms an integral part for effective learning of social sciences. Many *projects* could be effectively introduced to suit the individual differences of pupils so that the bright, dull and the average all have a chance to progress at their own pace. *Group work* should be encouraged. This would develop group-life and cooperative work. Assignments involving *independent study*, *discussions of current affairs* and *local Surveys* should be prepared.

As the *climate* of the school is the most important single factor that influences the child in a decisive manner, it is left to the ingenuity of the school administrator, to create a climate that could be conducive to promote desirable changes in the child.

Morning prayer, daily school assembly, observation of national days, festivals, and other important days of sages, scientists and poets, cleanliness of the campus, gardening, aesthetic care, uniformity in dress, literary, athletic and cultural activities, daily news bulletins, reviewing of periodicals and new books, discussion on current affairs—all these will help to create a healthy climate which will make learning a delightful exercise and a joy.

GROUP II

Curriculum Development in Science & Mathe

MEMBERS

1. Shri C.G.V. Setty (Karnataka) *Gro*
2. Shri R.S. Chauhan (Madhya Pradesh)
3. Th. Mahendra Singh (Manipur)
4. Shri V.K. Dhotre (Gujarat)
5. Prof. M.H. Rahman (Madhya Pradesh)
6. Prof. N S. Sharma (Uttar Pradesh)

What ?

From birth to death man lives and grows in the midst
its broader sense. He is curious to know what is happenin
why it is happening and how it is happening. He ac
experience by himself in this exercise. The sum total of all s
which are to be provided to him from his childhood onwar
matic and easily digestible form for better living forms
curriculum in Science and Mathematics. The words 'bette
the individual, the social and the national needs.

Why ?

Science education has now been recognised as an imp
nent of school education in all the countries. It needs gre
developing countries like ours for our progress and survival
day world of Science and technology. A nation's status is
mostly by its achievements in these fields. Also one
forget that we are living in an age of cut-throat competi
way of life and thinking of man have not escaped the infl
Thus it becomes more evident that without the understan
and its processes, the child and youth of to-day will not be
pate in national development and international under

now or in the future. Science education has also been recognised as one of the best means to help the child to sharpen his sense of curiosity and critical thinking. It also helps him in solving his problems by making use of the Scientific Method.

As mathematics is the backbone of all knowledge, specially of science, its indispensability has been recognised from time immemorial.

How much, for what stage ?

The nature and level of experiences that are to be provided to the child and youth cannot be one and the same at all stages, viz. primary, secondary and college. Though there is a need for providing knowledge of the major achievements of science and its impact on technology, industry, agriculture and many sides of life, one has to be very cautious while introducing and determining the content and the nature of learning experiences for different age-groups.

At the primary level emphasis may be laid on the immediate experiences concerned with non-living things such as water, air, earth, etc. and living things such as plants, animals and man, besides sanitation and hygiene. It will not be enough if we only transmit scientific literacy and numeracy at this stage.

Though there is no experimental evidence it is generally accepted by the experts that science is to be taught by disciplinary approach at the upper primary or the middle stage. At the secondary stage, a number of streams such as science, humanities, technology have to be provided. Physics, chemistry and biology (life-sciences) have to be the main components, mathematics being indispensable. While giving emphasis on modern mathematics care must be taken to see that certain merits of traditional mathematics such as computation skills are not lost.

Realities and ideal—how to bridge the gap

We know our goals and we are also aware of the realities. To achieve the ideals, to make education in science and mathematics more acceptable and attractive to the individual, more profitable to the community and to enrich the curriculum in science and mathematics without increasing the load of the syllabus, the following aspects may be considered.

Environment

A child is to be made aware of his immediate surroundings to exploit the local resources for accumulating conceptual knowledge. He is to be guided to observe and absorb the harmony of life keeping in view the limitations of where and when the factual matters could be introduced. For instance, while studying the earth-related science at the primary level soil erosion may be touched upon at a later stage though the child might have been aware of this phenomenon. Soil and its usefulness to plant-life need be made known to him at this level.

Self-learning

A child is to be given chances for direct handling and exploring his immediate surroundings as early as possible so as to enable him to identify the problems which he is likely to face as he grows. For example, the pros and cons of "cleanliness" under the unit "health and hygiene" can be developed by actually involving him in the related activities.

Emphasis on structure

While imparting knowledge, emphasis may be laid on the structure than on the content. That is, while teaching mathematics at the basic level of education, one may give greater importance on how to measure and count than on the units of measurement and the related conversion tables. The same case holds good for physical and natural sciences. In short, method is more important than matter or process is more important than product.

Learning by doing

The scope for learning by doing is almost absent in the present-day method of science teaching, though it is advocated by all the educationists. At the moment it is only "one-way traffic". To improve this, the classroom has teacher to act as a moderator between the child's experiences and the concepts to which the syllabi lead but not as a mere conveyor to the learning of techniques of manipulation. To cite an example, while bringing out the concept of buoyancy, the child may be given a chance to feel and experience the upward thrust due to the immersion in the beginning and later be helped to draw inferences by himself.

Low-cost materials

When we consider the percentage of rural and economically backward areas of our country, the use of locally available resources and environment becomes the basis for developing the instructional package as much as the situation permits. Improvisations from the locally available materials and duplication of instruments at a very low cost by the child and the teacher is to be encouraged so that teaching-learning in science does not suffer for want of sophisticated tools and instruments. If not, understanding and appreciating one's own surroundings and its potentialities will remain incomplete. In this respect we are to get enough guidance and inspiration from the novel experiment that is successfully going on in Hoshangabad, in the state of Madhya Pradesh.

Discarding dead wood

While ruminating on the rapid expansion in the areas of science and mathematics and while acknowledging the knowledge explosion in specified fields, one must review and remove the titbits of unrelated information piled up in the present-day syllabus and text-books. As an example, emphasis on developmental proceedings on the theories, say of atom model can be avoided and greater attention be paid to the developments and discoveries coming up after the birth of that theory. Likewise, introduction of the new methods of solving mathematical problems from an early stage of teaching mathematics is highly desirable as it meets the demands of the new complexities.

Keeping these in view science syllabus may include topics such as population, health and sex education, pollution, modern physics, modern mathematics etc.

Content of teacher education

Emphasis is being given to the theoretical aspect rather than to the practical aspect in the present-day curriculum of teacher education both at the primary and the secondary levels. This needs complete renovation. It is high time we train them to exploit the local environment and to make the optimum use of the existing facilities to make science teaching effective and interesting.

Training in some of the micro-teaching skills like set induction in small groups, recognising attending behaviour, increasing pupil participation in activity method, stimulus variation, illustrating with examples, fluency in questioning, achieving closure, etc., which is much suited to the discovery method may be included in the training programme.

Training and orientation in science and mathematics may be a compulsory feature for both the primary and secondary teachers at regular intervals.

Teaching technique

Though it is very essential that the child must be made aware of the latest developments in the fields of science and technology, care must be taken to see that the load on the child does not increase. For this, the teacher must use new techniques. It is not the abstract definition or formula or a particular rule to be remembered by the child but he must be enabled to discover the law by himself through suitable activities. For example, to give the concept of density to the children of primary level, they may be asked to collect different substances from the local environment having almost equal volume. Then they may be allowed to experience their weights and then to record their observations. (In lower classes oral exposition will be enough). By putting suitable questions the teacher may enable the children to discover the following facts such as :—

1. All substances are not equally heavy.
2. Iron is heavier than wood.
3. Aluminium is lighter than iron.

Then the teacher can recognise these facts and help children to generalise.

At the outset this approach appears to be time-consuming. But during this one activity different topics in biology, physics, chemistry, mathematics and even in social sciences can be covered provided it is suitably structured.

Something holds good for mathematics. Even a concept like "joint and disjointed sets" can be taught to the child without using either mathematical symbols or terminology but by involving them in a suitable activity.

It is necessary to remember the statement made by Brunner that anything can be taught to anybody at any stage in an intellectually honest form. A resourceful teacher always plans his lesson in such a way that the pupil's participation will be maximum. The approach in mathematics is full of self motivation and encouragement for the child both at the primary and secondary levels.

Basic materials

Text-books, supplementary reading materials, guide-books for teachers and students, work-books, laboratory manuals, etc. are the basic tools in teaching-learning situations. The preparation and production of these materials are not quite satisfactory at the moment. In many states this important work is done by the text-book corporation or the Dept. of text-books or the Board of Secondary Education. In many cases the really capable writers and the grassroot level workers are not involved in this task. It is not uncommon to see that if at all such persons are involved in a fairly good number of cases, it will be not on their individual merit. Many a time, extraneous factors such as caste, relationship, pressure from different sources, influence the selection of the members of the committees constituted for the preparation of text-books, etc.

The basic material must be prepared on sound, solid lines as they form the very basis for the complete structure of educational system.

The language and presentation in the text-books particularly with respect to scientific terminology are rather difficult to be understood not only by pupils but also by teachers. This is more so in the case of rural schools. It is high time that text-books were restructured keeping in view the above factors. Also the illustrations both pictorial and verbal should be as real as possible and closely related to the child's life. The text-books so prepared are to be tried out, evaluated, restructured and finalised.

Accessory material

To vitalize the entire teaching process, accessory materials such as equipment and apparatus, audio-visual aids are needed.

Many state governments and NCERT have prepared a number of kits suitable for different classes. And they have been supplied to a large number of schools at a huge cost. But till now it has not been possible to cover even all the elementary schools in the country. Even the kits so supplied are not being used properly in the majority of schools for many reasons. There is a dire need for training the teachers to use the material available in the school and in the environment in the most profitable way.

Community resources

These are not being tapped in the proper way. The craftsman, the farmer, the philanthropist and the enlightened public—all are there. Panchayats, cooperative societies, places of worship are also there in the village. These are to be exploited for the betterment of school children. Sometimes community is to be brought into the class and sometimes the class has to go to the gardens, farms, workshops, factories etc. belonging to the community-members. Such a happy dialogue between the two sides is beneficial to both.

Science clubs and science fairs

No doubt science clubs and science fairs are helping the cause of science education. The way in which they are functioning and in which they are organised need a lot of renovation. Teachers are actually directing and doing everything for the children in their name. The very philosophy underlying the formation of science clubs is missing in a majority of cases. During science fairs the pupils' participation is usually limited to explaining the models or exhibits to the visitors. These things must improve and pupils must be encouraged and helped to play their roles in the proper way.

Educating the public

At present, parents do not have a proper concept about education in general and about science-education in particular. Even now the 3R's are dominating. They want their children to memorise the facts and to repeat them in the examination so as to score high marks. Because of this, some parents go to the extent of protesting against the basic philosophy of new Science education "Learning by doing". This is more so in the case of mathematics. A good number of educational administrators of the old School also fall in line with such parents. Hence a large-scale movement is to be launched at the national and the state levels to popularize science and science education among the general public. In this massive effort, we can take the help of mass-media such as radio and T.V. in addition to books and journals on popular science for obtaining good results.

Associations

We do find associations of teachers at various levels starting from the local to the national level. These associations can contribute to the betterment of education in numerous ways. It will be better if they devote some of their time and energy in trying out ways and means to improve the quality of education in addition to putting forth and pressing the demand for improvement of their service conditions. Encouragement may be given for the formation of subject-teachers Associations for bringing in quality improvement in the field of Science and Mathematics education.

The parent-teacher associations can discuss the various problems of schools including those pertaining to effective science teaching, instead of becoming "mutual admiration centres". In some states these associations have generally provided free of cost all the equipment needed for a good laboratory to their schools. Such models must be given due recognition by the concerned state government, so that people from other parts get stimulated to come forward with their donations.

Role of universities

Unfortunately in our country, there is very little co-ordination between school education and higher education. Usually they think independently. As education is a continuous activity there must be a strong and smooth linkage between the two. The situation appears to be improving these days. Any change taking place in any one of them is sure to affect the other. Hence there must be proper and perfect co-ordination between the two agencies. This is of paramount importance especially in case of Science and Mathematics education.

School complex

No doubt this is a novel idea. But at the moment it is not in vogue in all the parts of the country. Even then where it is in vogue, conditions are far from satisfactory. This philosophy needs greater popularization and faithful implementation. This will specially be of very great help for good science education. Many problems, such as lack of laboratory equipment, qualified science teachers can be solved by this method.

Mobile science laboratory

Efforts are being made in some states for "taking science to villages". Some vans are specially designed to serve as well-equipped laboratories and they move from village to village on a particular schedule and provide an opportunity for rural children not only to see the experiments pertaining to their syllabus but also to do some practical work. This innovative practice needs greater attention and larger expansion.

Creating interest in Mathematics

The general feeling that mathematics is dull and uninteresting can be radically changed by introducing and practising certain innovative programmes such Mathematics clubs. Academic tournaments, Mathematics exhibitions, Mathematics corners, Newton of the class, Mathematical games and recreations, puzzles and problems, etc. both in the primary and secondary schools.

Evaluation

Though evaluation is considered as an important component in the school curriculum, it is not being carried out in the proper sense at least in respect of Science and Mathematics. At present only paper and pencil tests are used as the only tools of evaluation. The objective of teaching Science and Mathematics is not merely to encourage acquisition of knowledge or training the faculty of memorisation. Development of skills and formation of attitudes are equally important objectives. In our present method there is no scope for this. Hence it would be better if suitable tools and techniques are devised and employed to evaluate the learner in this aspect also.

Evaluation is a continuous process. It must be an in-built mechanism of the educational system. The teacher needs special training so that he can do his job satisfactorily. The pupils and the parents may also be involved in evaluating the quality of instructional material to check whether they are satisfying the individual, social and national needs.

GROUP III

Curriculum for Rural Development

MEMBERS

1. Dr. Mahtab Ali (Bihar)	*Group Leader*
2. Miss Margaret Behera (Orissa)	*Member*
3. Shri Zosiama Pachuau (Mizoram)	,,
4. Shri Lalit Mohan Tiwari (Rajasthan)	,,
5. Smt. Sushila Bapat (Maharashtra)	*Recorder*

Relevance

India is a country of villages. 80% of the population lives in rural areas. The social and economic conditions of rural areas have put forth a challenge before the nation. Rural development in a democratic society is not a matter of plans, finances and physical facilities. These are simply the means for changing the minds, attitudes and actions of the people. Education plays an important role in bringing about this change only if the curriculum is need-based and takes into account the values, interests, expectations and aspirations of the people.

The present curriculum is subject-biased. It has an overwhelming theory-bias and it keeps away the pupils from manual labour and productive enterprise. Power prestige and rewards accrue only to those who could reach the highest level.

The rural situation is not congenial to such curriculum. In rural areas there is a need to educate all age-groups through formal as well as non-formal approach. A number of boys and girls have to leave schools at one stage or another. A large number has no chance to see a school due to poverty, social handicaps and lack of interest. Those who somehow reach the highest ladder are attracted towards city life and cannot provide constructive leadership.

Apart from this, there are language problems, natural hinderances like lack of communication.

In order to develop good curriculum for the rural population we have to take the following points into consideration

(i) What they know
(ii) What they think and feel
(iii) What they do
(iv) How better they should do
(v) What resources are available
(vi) What agencies are to be created
(vii) What will they need after development.

Curriculum strategies for rural development

Every rural area has its own specialities and problems. It would be advisable to make a socio-economic survey to locate the needs and resources of each and every village. Curriculum strategies should be situation-based.

The following strategies are suggested—

(a) *Communication*

Objectives of education are achieved only if there is exchange of ideas and thoughts. Language is a powerful means of communication. The language used by elites is not understood by the rural people. Hence dialects and folk languages must find a place in the curriculum specially at the elementary stage and in the adult education programmes.

(b) *Economic development and exploration of human occupations*

No development programme can be successful unless it assures and provides for economic improvement of the individual and his family. In rural development programmes agriculture is given priority. Taking into consideration the local resources, curriculum may include some of the areas given below :

(a) Agriculture-biased : dairy-farming, poultry, fishery, production of fertilizers and manures, repairing of tools.
(b) Agriculture-related : horticulture, forestry, bee-keeping.
(c) Skill-oriented : spinning, weaving, shoe making. tailoring, pottery, house construction (cheap type), carpentry, smithy.
(d) Resource-oriented : bamboo baskets, playthings, grass materials, frames, mat-making.

Health & hygiene

Scientific knowledge and health in daily life through the development of healthy habits, is an urgent need in the rural area. Insanitary conditions, outbreak of diseases, unscientific food habits, negligence of child care have resulted in the deterioration of the health of the people in rural areas, Social hygiene is the most neglected part and its importance can be realised by people only through practical habit-formation. Through formal and non-formal approach, such as Yogasanas, Homeopathic, Ayurvedic and Yunani medicines, the health and hygeinic habits of the people could be improved.

Acquaintance with environment

A developmental programme is based on maximum utilisation of all resources, human as well as material. An outlook to locate the resources should be developed. Acquaintance with the physical, historical, cultural back-grounds and the inter-dependence of various types of people in the society should be given to the rural people. Opportunities to get acquainted with the cultures of other people should also be provided.

Culture

Group-songs, folk-dances, folk literature, folk art are the real tools by which it is easy to approach the rural people. Such rapport helps to create confidence and its value in educational programmes cannot be minimised.

Integration

One of the reasons why developmental programmes have failed in rural areas is lack of social and emotional integration of the people. The undue importance attached to the caste system has created room for social and political exploitation. Scientific attitude towards social problems will help to bring about harmony and cooperation among the people. Integration is also possible through organised activities like Bhajan, Kirtan, Mela, etc. This was exactly done by the great saints of India.

Leisure activities—education through recreation

During off-crop-season the rural people find a lot of leisure. This leisure time can be utilised for a number of organised educational programmes. Such programmes may have recreative as well as creative value.

Training in citizenship

Success of democracy depends on the proper use of rights by the people and the awareness of their duties. Only the ability to discriminate between good and evil, tolerance of differences of opinion, faith in freedom, justice and equality can help mould a man into a good citizen. Mass education will lead to this desired end.

Identifying potential leadership

Through formal and non-formal education it is possible to identify persons having leadership potentials. The villagers would like to have a leader from their own locality. They will not suspect his motives. He is easily accessable and can be utilised to bring about changes in the minds of the people.

Problems and issues related to community involvement

The first and foremost factor is to have enthusiastic workers with missionary zeal. At present a number of government agencies are involved in this work of development. The capacity of these government agencies to carry out the desired goal is however a point of dispute. Teachers also need field experiences before they start teaching in schools. They should also be given training in non-formal programmes under the guidance of experts from various departments.

Coordination of various agencies

In order to get the maximum advantage of various developmental programmes for educational attainment, there may be some coordination between different agencies. Some such attempt is made under the Panchayat Samiti pattern.

Dearth of women workers

Taboos and Social customs block the way of women education. The social backwardness of women results in the backwardness of children too. Some means of making use of the talents of capable women workers should be found out.

Poverty

Parents cannot afford to send their childran to schools because of poverty. It is often seen that children are hungry, upset and cannot pay attention to school studies.

Lack of voluntary organizations

Voluntary organizations, ready to work for the betterment of rural area are very few. Most of them unfortunately do not have a good reputation of honesty and hard work.

False beliefs

The rural people are generally in the grip of a fear complex. This has given rise to innumerable superstitious beliefs, notions and ideas. Notorious practices have also their origin in such false beliefs.

Suggested innovation in methods and techniques

Formal Education

Every rural area must have pre-school facility in simple form ;

- (a) It may be work-oriented.
- (b) Suitable work areas may be selected and skills and knowledge be learnt by the students through experience.
- (c) Subjects may be related to the area of work.
- (d) Citizenship, individual human qualities may be inculcated through organized programmes in collaboration with the rural people.
- (e) The teacher can be given opportunity for utilisation of services of non-teachers for the various areas of curriculum.
- (f) Cultural and recreational programmes can be frequently organized to attain certain social objectives.
- (g) The school may be kept open for the students as well as for people for longer hours with various types of verbal and non-verbal instructional materials and self-learning exercises.
- (h) Group assignments, group discussions, group work techniques for planning and decision taking may be utilized by teachers.
- (i) It is suggested that no student may be detained at any stage upto the age of 10.
- (j) Multiple-entry system may be introduced.
- (k) Organizational skills through social science can be developed from 13 to 16 years. Critical knowledge of developmental activities should be given.
- (l) Teacher training courses for teachers can be organized.
- (m) The teacher can establish a good rapport with other teachers working in urban areas through excursions, pen-friendships, etc. The rural children may be associated with urban ones. This will help to minimize the misunderstanding on both sides.
- (n) There is to be no rigidity in school timings.

Non-formal educational programmes

- (a) In every area the school can also be used as a non-formal centre and the teacher may be paid additional allowance for the same
- (b) Such centre may be equipped with library, radio set, self-learning instructional materials, pamphlets, newspapers, non-verbal learning materials, etc.
- (c) All the agencies may organize their programmes in these centres.
- (d) The programme can be planned and scheduled at least thrice in a year.
- (e) The centres may be well equipped to impart skills in various work-areas and also to acquaint people with new techniques and trends related to their lives.
- (f) Fairs, festivals, functions can be made educative by proper organization by the village youth.
- (g) Summer camps by teacher organizations N.S.S., N.D.S., continuing

education centres may be arranged in rural areas in cooperation with the people. Its indirect effect for social change is always appreciable.

(h) Reputed womens' associations, social workers' associations like the Lions club, Kasturba Trust, Sarva Seva Sangh, etc. may make specific attempts to establish rapport in rural areas to bridge the gap between the elites and the rural folk.

It is suggested that the points mentioned in the report may receive active consideration while developing the curriculum for different stages.

The work is challenging and Education department can train young and enthusiastic experienced teachers of both sexes with a definite understanding of not transferring them for extraneous reasons. A number of such non-formal centres may be immediately started to attain universalization of primary education. Only universalization of education can give the opportunity for the development of a rural child as a learner, as a person, as a citizen, and as a worker who will be able to do everything for rural development.

GROUP IV

Vocationalisation of Education

MEMBERS

1.	Shri Louis Vernal (Mizoram)	*Group Leader*
2.	Shri S.V.V. Raghavacharyulu (Andhra)	*Member*
3.	Shri K.B. Maini (Chandigarh)	,,
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5.	Shri S.R. Mylaraiah (Karnataka)	*Recorder*

Background

There exists a gap between work and learning. Many efforts have been made in the past to bridge this gap, notably the concept of Basic Education of Gandhiji, the concept of Work-Experience of the Kothari Commission and now the concept of Socially Useful Productive Work of the Ishwar Bhai Patel Committee.

The unifying idea is that work and learning must proceed hand in hand. The students are not to consider themselves merely as consumers but realise their role as producers engaged in the task of nation building. It is hoped that through this approach the gulf between the poor and the rich, the urban and the rural areas can also be bridged. Besides making learning meaningful and relevant in work situations, it is hoped that the employment problem can also be solved to a considerable extent. It is through work education that the optimum integrated development of the child as a learner, as a person, as a citizen and as a worker can be achieved.

This report is based on the documents available in the field together with the conclusions we have arrived at from our experiences and discussions. The report is in two parts, one dealing with the Socially Useful Productive Work for the Ten-Year School and the other with Vocationalisation of Education at the +2 stage.

Socially useful productive work for 10-year school

The concept of Socially Useful Productive Work has the following underlying factors :

(a) it is purposive and meaningful manual work resulting in either goods or services,

(b) it is socially useful, that is, useful to the community,

(c) learning takes place in and through work situations

This concept has now been extended to the +2 stage.

Objectives

The general objectives of this programme are :

(a) to dissociate learning from its bookish character and relate it closely to socially useful productive manual work and the socio-economic situations of the country

(b) to inculcate values and positive attitudes like self-reliance, dignity of labour, cooperation, helpfulness etc.

(c) to solve the ever-growing unemployment problem.

At the primary stage, the emphasis is on the acquisition of knowledge and skills for planning and executing Socially Useful Productive Work with a view to making education work-based. At the secondary stage, the stress is on exploring the world of work and understanding the realities of life in order to prepare for a competent and confident entry into the world outside the school. Participation in and promotion of social activities in the school and the community are envisaged at this stage too.

It is necessary to have a linkage in the objectives and actual work practice from one stage to the other and the children participate increasingly in productive work as they go from one stage to the other till they enter the world of work. Thus there is a vocational development alongside their developments in the mental, emotional, physical and other areas. The learning process will become increasingly job-oriented.

Implementation

Integration of work and learning

Integration of work and learning is the keynote in this programme of socially useful productive work. This integration can be done in two ways :

(a) integration of subject areas with work situations, and

(b) using work situations as media for learning.

Both of these procedures are useful depending on circumstances. In this context, the whole of learning process can be divided into functional integrated units. A re-writing of text-books, preparation of guide-books and other instructional materials are necessary, the accent being that learning is achieved through doing.

Flexibility and decentralisation

This integrated approach calls for both flexibility and decentralisation. The classroom routine, the academic year, and the very location of the classrooms need to be flexible. The trend so far has been to bring work to the school but there is also the possibility of taking the school to the actual work field, especially when the children are engaged in social service or productive work. While children are engaged in such process, some learning will be incidental whereas some other will be planned.

Teacher training

This new approach to the teaching-learning process demands a total revolution in teacher training programmes. Training should take place in the same type of situations which the teachers will face when they return to the schools. Acquisition of skills is more important than mere accumulation of knowledge.

In-service training programmes are also needed, not only for teachers but also for educational administrators especially the inspecting and supervisory staff.

Involvement of all the teaching staff and not merely the Work-Experience teachers for socially useful productive work is a factor that will contribute to successful implementation of the programme.

Community service

Socially useful productive work must include services in the community especially in the areas which deal with the primary needs of man namely, health and hygiene, food, shelter and clothing.

In this connection, Work-Projects may be undertaken by the students of the secondary stage. Such activities can be taken up in leisure time too and are remunerative.

The socially useful productive work by the students can meet the day-to-day needs of the school such as production of necessary furniture, teaching-aids, etc. The concept of self-sufficiency and self-reliance is not out of place here.

Community involvement

The successful implementation of this programme requires the active participation and cooperation of the other agencies in the community. In this connection, a survey may be conducted to identify the following :

(a) the needs and requirements of the school in terms of resources, both human and material

(b) the resources in the community.

The community and its many agencies are to be oriented through personal contact or writings and their role in the successful implementation of the programme explained and emphasised.

The school while exploiting the resources of the community may keep its doors open to the reasonable demands of the community too. This is important because the community often complains that its 'earning hands' are in the school. Through socially useful productive work, this complaint is minimised and the twin problems of wastage and stagnation are solved to a considerable extent.

Evaluation

Though socially useful productive work is an essential part of the curriculum, it need not be externally examined. The evaluation of socially useful productive work involves a process and a product. The process, being more comprehensive and important since it includes the acquisition of values and attitudes and the development of skills, is to have greater weightage. Continuous internal assessment on a proforma that includes acquisition of knowledge, values and skills may be done by giving credits and grades. A record of the activities may be maintained by the schools. Whenever promotions are involved, evaluation of socially useful productive work may be given appropriate weightage. The teachers need to be trained and oriented to this system of evaluation.

Employability

Through socially useful productive work and subsequent vocationalisation of education, it is hoped that the problem of unemployment can be reduced. This programme is not a passport to securing jobs. Moreover, the possibility of getting a job is limited and the alternative concept of self-employment is to be stressed. Here it may be mentioned that the concept of self-employment involves a lot of self-initiative and creativity. These two aspects are to be encouraged in any productive work or service.

Coordinating agency

Various programmes are being initiated in different parts of the country. Some states bring out detailed guide-books on various courses. A centralised agency to pool these resources and act as a clearing house for information is necessary. The sooner such an agency is established the better it will be for effective implementation of the programmes of socially useful productive work and vocationalisation of education.

Mobility

The programme is to be implemented in such a manner that there is the possibility of vertical and horizontal mobility, some going into the Higher Secondary stage and finding a linkage there and the others diverting to the field of work and finding themselves sufficiently competent.

Plan of work

As a plan of work, the following can be considered :
Pupils of the first three classes (I-III) are to observe and understand materials, processes and operations in the various fields of nearby work areas. They may handle plastic materials like clay, paper, cardboard, etc. to make decorative and useful articles. Where certain vocations exist in the higher classes, these children may be able to attend to some minor operations of these vocations,

The skills of observation are to be translated into skilful but less complicated action programmes in the case of children of classes IV-VIII. They may engage in gardening so as to get an understanding of the science subjects and also are able to earn while they learn by selling the produce. These children can also be introduced even in the rural areas to expanding fields of science and technology suiting their environments and working with pliable materials. They have to engage in and adopt the inquiry approach and design the necessary equipment and apparatus for a deep understanding of the environment. This will naturally inter-relate education with socially useful productive work.

In classes IX and X, different areas of vocational efficiency may be introduced like agriculture, dairy-farming, veterinary science. Besides they may be engaged in working with solid materials like wood, iron, etc. These may be introduced without involving undue expenditure and with the materials and tools available within and around the school. The cooperation of various departments is needed in this regard. Thus by a graded development of experiences in socially useful productive work, the pupils may achieve a sense of self-reliance and are able to do independent work.

Vocationalisation of Education for the +2 stage

While the 10-year school can be termed as a pre-vocational stage, the Higher Secondary stage becomes vocational in nature, with at least 50% of the students going into the vocational stream. However, vocationalisation of education cannot be equated with mere technical training. It must be educational all through and should be envisaged to form an integral part of general education.

Vocationalisation of Education has become important because of the development of science and technology, the need to use the limited resources to the maximum, the problem of unemployment and the need to generate employment opportunities. Vocational education is a preparation for an occupational field. Besides these, the following considerations may be kept in view :

(a) Vocationalisation of education must help the pupils in understanding the principles involved in various forms of work and they should participate increasingly in productive work.

(b) The inculcation of values and positive attitudes like self-reliance, dignity of labour, cooperation, helpfulness is an integral part of this programme.

Implementation

Comprehensive surveys

The implementation of vocationalisation of education is to be based on a survey of the locality which helps to :

(a) identify the vocational requirements; the jobs which have a reasonable potential for development are also identified, thus leading to employment opportunities.

(b) identify areas for self-employment.

(c) identify agencies which will help in the implementation of the programme together with available resources.

This Survey need not necessarily be done by persons in the educational field since there are others who are more competent and are in need of similar information. A collaborative effort with the various private and government agencies is worthwhile. Available data may be utilised also. However, this information may be supplemented by actual field study to verify the findings, wherever possible.

Once the job potential and the agencies are identified, the identification of courses is the next step based on the needs of the area, their relevance and the employment potential.

In the initial stages only such institutions where the success of the courses can be assured are to be chosen for implementation of this programme. Such factors as finance, equipment, efficient management may be kept in view. The resources of the community are to be exploited to supplement these inputs.

These criteria for the introduction of a course depends also on the number of students who opt for it. The students are to be admitted to a course following aptitude and ability tests which may be administered by the agency involved in the implementation of that particular course with the collaboration of the school. Thus the aptitude test for admission to nursing course may be administered by the hospital itself. The number of seats may be limited keeping in view the job prospects.

Exploitation of community resources

The resources of the various agencies of the community are to be pooled together for the implementation of the programme. These will include:

(a) institutions where actual work is to be performed. (The students are to learn in actual work-places'situations.)

(b) teachers who may be professional or technical persons.

It is the task of the school to coordinate theory with practice.

There may be a need to orient these professional and others technical men to the methodology of teaching through personal contacts or information. Training is also needed in the procedure of evaluation. Where possible, short-term courses may be thought of.

Within a cluster of Higher Secondary schools, mobility of students and staff may be necessary to cater to the various requirements of the courses, if feasible. There may be a mobile workshop for the maintenance of the equipment of such clusters of schools.

Flexibility

Flexibility in the duration of various courses is also called for. Some courses may be of one year's duration while others may need two or three years. The possibility of vertical mobility or advanced training in the courses may be provided. Moreover, if semester system is introduced, the students who had to interrupt courses due to various circumstances, may be allowed to complete the course.

Since there are both the academic and vocational streams, a change-over from one to other may be allowed.

General education in the vocational stream which constitute about 15% of the total duration need not be on par with the academic stream but should be functional in nature suited to the vocational nature of the stream.

The students who enter and pass out from the vocational stream and who desire to continue academic education at the graduate level, may be allowed to do so through non-formal education and open examination system by providing bridge courses.

Linkage

The linkage of socially-useful productive work of the high schools with the vocationalisation of education in the Higher Secondary schools is possible and useful. Moreover, since the +2 stage is part of the school, the possibility of linking classes IX and X with the Higher Secondary course may be considered and vocationalisation of education introduced from class IX.

Instructional and guide materials

The absence of suitable text-books is not a serious handicap. Handouts and brochures may be prepared If units or modules for specific areas are prepared they can replace text-books. Part-time and correspondence courses for enriching the training undergone, or helping persons in work areas, may be given by these schools.

Guidance is essential when choosing a course during the process of training and in choosing a career. Hence it should be continual and is an essential feature of the vocationalisation of education.

Employment

While giving training, the necessity of self-employment must be emphasized. The areas where self-employment is possible, the ways and means to self-employment are to occupy an important place in the vocationalisation of education. Self-initiative and creativity are to be encouraged in this context. The areas where self-employment is possible are in the areas of agriculture, small-scale industries, cottage and village industry, health and sanitation, repairs and maintenance, cooperation, social service, to name a few.

The possibility of earning while learning through servicing work and other productive work under the supervision of the teachers may be considered. Thus training must translate softwares into hardwares too.

Rural development

The process of vocationalisation of education may be slow in the rural and backward areas due to the lack of resources but a beginning on a small scale can be made. There is need to train personnel for middle level supervisory jobs in industry, business, farming medicine and social services, who will stay in the rural and backward areas. The specific needs and requirements of rural and backward areas may be met by such courses. Vocational courses which are based on scientific and technological development may also be introduced.

In rural areas, the broad areas to be covered by vocational courses are: agriculture and allied activities, rural and small industries including handicrafts, social services, other services including the tertiary sector.

For too long it was thought that the students who opt for vocational studies are generally endowed with lower intelligence though manual labour is an important aspect and the students admitted to academic streams are supposed to belong to a superior intelligence group. There is therefore a dire need to cultivate vocational culture and break such mentality. Hence the cultivation of proper attitudes in this regard is necessary. Similary, there must not be a feeling of deprivation or inferiority on the part of the rural and backward areas on the basis of the availability of vocational courses.

Science and technology are to be brought to the rural areas. Depending on the availability of facilities, there may be no distinction between the courses in the rural and urban areas except for the vocational courses identified to suit the needs of the students and the community.

In the rural and backward areas, courses which have direct bearing on the developmental activities of the area and can raise the standard of life by providing facilities, may be introduced.

The intention being to bring the school closer to the community, knowledge *per se* cannot be the objective of education and hence should not govern our entire teaching-learning activity blindly. To make the educational activities more meaningful and productive, the teacher must be equipped with additional knowledge and skills to handle different contents to enable him to achieve the objectives of developing the child as a learner, as a person, as a citizen, and as a worker.

GROUP V

Teacher, Teaching Techniques and Materials and the Curriculum

MEMBERS

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Background

It is a well-accepted fact that education is the fourth basic need of man in this ever-changing world. To meet this need an army of teachers is necessary and there is no possibility in the near future to impart adequate training to this army. The speed of change is so rapid that the training imparted to-day may be useless after a short time. Any approach found to be successful at one place may not be successful in a different setting. Under such circumstances any kind of stereo-typed training for a teacher may not be sufficient. What is needed for a teacher is sensitivity towards change and a dynamic attitude to get adjusted to it.

A teacher once appointed cannot wait for training for an indefinite time. While teaching he may come across different types of children, different types of environment and different types of communities. Even after careful planning a teacher may be required to change his plan at the eleventh hour, and adopt another suitable approach to do his job satisfactorily. It is quite likely that everyday he may be required to meet a new challenge and his ability will be severely put to test. Therefore the teacher of today needs to be prepared for this situation.

Teacher involvement in the development of curriculum

Even a very well-defined curriculum would be an utter failure if the teacher community is kept totally in dark about it. Teacher involvement at every stage of curriculum construction is an opportunity for his education and also a step to create a sense of belongingness with the curriculum which he has also to implement.

Involvement of teachers in the process of development of curriculum is also necessary because he is the person who is in constant touch with children, and knows their needs, abilities, aptitudes, environment and the community to which they belong. So, a teacher is always in a better position to tell what is suitable for children and what is not.

Since independence a small percentage of teachers had been involved in the process of curriculum development. However, now involvement of higher percentage of teachers is considered to be necessary. Such teachers can be selected according to their competency in this field. One of the criteria can be long and varied experience. A person who has worked as a teacher, headmaster, supervisor, teacher educator can have a better vision of the situation.

Secondly, teachers from various cultural and social backgrounds may be able to contribute for curriculum development.

Thirdly, teachers experienced in teaching different subjects of the curriculum may also be involved in the process of curriculum development.

Similarly, area-wise selection of teachers is also necessary. For example, consider the two districts of the State of Tamil Nadu, namely, Thanjavur and Coimbatore. The district Thanjavur situated on the delta of river Cauvery flourishes in agriculture, while Coimbatore district flourishes in the Textile industry. The patterns of life in these two districts differ. Therefore pupils have different attitudes. Such samples affect the scope of curriculum development.

Adequate orientation of such teachers is necessary and they need to be aware of their role in curriculum development. Orientation can be arranged through short-term courses, work-shops, seminars, etc.

After framing a draft curriculum, it is necessary to place it before the whole teacher community for inviting their reactions, comments and suggestions. This is also a kind of teacher involvement and teacher education regarding curriculum. If necessary, such a draft curriculum is modified and then comes to the experimental stage.

In the experimental stage, such curriculum is tried out at selected sample schools. Here also teachers are to be involved in curriculum development for specific purpose. For such teachers also suitable orientation is necessary as their reactions, comments, suggestions would be useful. After a certain period these reactions from teachers are studied. The curriculum under try-out is modified if necessary, and then it can be passed for field implementation.

Thus, if we mean it, there is much scope for teacher involvement in curriculum development; very obvious drawbacks can be corrected before the stage of field implementation. However, at the field implementation stage also there is much scope for teacher's involvement for further improvement of the curriculum.

Teacher preparation for effective use of school curriculum

Whenever a new curriculum is to be introduced in schools, the whole teacher community concerned is required to be trained and this is done through :

1. Pre-service training
2. In-service training
3. Short courses, workshops, seminars, discussions, etc.

It is common experience that training imparted at such courses remains at theoretical level only and does not help much for the effective implementation of curriculum.

The real function of a teacher is to help the child develop as a learner, as a person, as a citizen and as a worker. In order to help teachers to achieve this goal, teacher-training institutes can take up the work of analysing the curriculum, in terms of objectives, content, and practical work related to that content. With the help of such analysis they would be able to develop teaching-learning stratagies, specify teaching techniques, suitable for teaching the different types of content A teacher-training programme will evolve out of this work. It will also facilitate organising teacher-training programmes and developing instructional materials for teachers and pupils.

Any new approach to be practised by teachers in the field can be tested and, if found suitable, may be practised by pupil teachers. For example, project method, activity method, environmental approach, etc. need not remain at the theoretical level. At least, some of them could be put into practice. If, in schools, we mean to shift our emphasis from teaching to learning, let pupil-teachers also learn some of the content matter by this method. If teachers are expected to prepare improvised aids in schools, let the teacher-training institutes also prepare and use such aids instead of sophisticated aids.

Work-experience or pre-vocational education will be an essential feature of our Secondary education system. At present, teacher-training institutes are not closely associated with the subject as it has a practical bias only. Still, teacher-training colleges may take more interest in the subjects so that facility for its better treatment may be explored.

Similarly, co-curricular activities form an essential component of school education. It is a general observation that such activities are not planned and organised to achieve educational goals. It would therefore be appropriate if teacher-training institutes take steps to guide teachers in this respect also.

It is generally observed that many a time, instructional materials developed for teachers or pupils are not used by teachers because they do not know how to use it. Teacher-training programmes may provide suitable orientation for this purpose.

School organisation is a subject of practice rather than of theory. After giving a short outline of the subject, pupil-teachers may be attached to schools for a period of a month or so. During this period they can learn many techniques of maintaining a good school. They can learn, many units of school organisation, by working on them. Hence internship may be made an essential feature of pre-service teacher-training programme all over the country.

For effective implementation of any curriculum, involvement of the community in the process helps much. As such, pupil-teachers may be acquainted with approaches of doing so. A school can be a community centre if it organises formal as well as non-formal activities of education. Naturally, teachers working in the schools have to associate themselves with different programmes of and for the community. An effective orientation in this respect can be given to pupil-teachers through special social service camps. Through such camps, pupil-teachers can be acquainted with the different avenues of social work with respect to adult education, health, cleanliness and functional education. They can also realise the importance of community living and team work.

Action research projects can be taken in schools only. However, teachers are not conversant with the techniques of action research. Teacher training institutes are in a position to undertake action research projects and also involve and orient teachers and pupil-teachers in those techniques.

Similar is the case with extension work. Teacher-training institutes can associate pupil-teachers and teachers in their extension programmes so that they may be conversant with the techniques and procedures of this work.

Primary school teachers need a good training in singing songs, telling and dramatising stories and children plays. Everywhere in India schools lack properly trained teachers for this purpose. Hence in teacher-training programmes for primary school teachers, special attention is needed for subjects like child-music, child-art, child-play and story-telling for children.

Teacher-training is therefore a comprehensive process with various dimensions.

Suggested innovations related to techniques and materials for effective use of school curriculum

(1) The present-day teacher is used to the chalk-and-talk method in which the teacher teaches and the pupil is a passive listener. The main

change to be introduced in the process of teaching-learning is to shift the emphasis from teaching to learning.

(2) Consequently there would have to be a change in the teacher-training programme. Instead of mere class-room teaching, scope would have to be given for other suitable methods of learning. Instead of only class-room lessons, at least some lessons would have to be practised outside the class at places like play-ground, school garden or even at places outside the school, where the individual pupil works and learns.

Self-learning techniques would have to be familiarised through teacher-training programmes.

(3) In the majority of schools, conditions are not favourable for either teaching or learning. There are very few schools where we find satisfactory accommodation, staffing and equipment. Hence, pupil-teachers may be exposed to different types of schools. Practice teaching and internship may be organised in some good schools, some average schools, some poor schools and also in some over-crowded schools. This practice is being followed in Maharashtra.

(4) As stated earlier in this report, during the coming years even after formal training, no teacher can depend upon any outside agency for his training. He has to be self-reliant, and prepared to train himself for any kind of work related to teaching.

Teacher's self-preparation may start from his awareness about his duty, responsibility and a determination to do it.

Next, he has to be aware of his pupils, their needs, their likes and dislikes, their attitudes, their strong points and weak points too. His awareness about the community around his school will help him to understand his pupils better. His rapport with the community will help the teacher to know their ways of life, their occupations, their traditions, their culture and their faiths. Knowledge of these aspects will help him to select suitable learning expriences for his pupils.

Awareness about environment will help the teacher to a very great extent. He can explore and exploit the environment to implement any curriculum effectively. His learning experiences and materials required for educational aids will be mostly obtained from his environment. The teacher may therefore develop the skills of observation, record, analysis and generalisation or of drawing inferences.

The next step would be to locate suitable sources for his own enrichment with fresh knowledge and new skills.

There are plenty of such sources. The teacher has to be receptive to them. For example, mass media like T.V. or radio can organise good programmes for teachers. Teachers may take advantage of them, as well as contribute to them by way of script-writing, using or producing them.

A lot of literature is published regularly in educational journals and many of the vital problems of education are discussed in general periodicals also. Even a casual look at such journals may keep the teacher informed about the new trends in education. Here teachers also can contribute to such journals by expressing their views on these problems.

Besides these, even without spending a paisa, one comes across folders, booklets, advertisements, wrappers, catalogues, graphs, maps, charts, posters, providing information about so many things which help the teacher to up-date his general knowledge.

There are schools, training institutes, colleges etc. located round about schools. For any problem, the teachers can approach such institutes and possibly obtain solutions to their problems. Some every-day problems in education can be solved by teachers through action research.

Occasionally, teachers may visit industrial concerns, fields, museums, zoos, botanical gardens, hospitals, acquaria, exhibitions, fairs etc. Much valuable informations can be acquired from these places.

Casual visits to bus stations, railway stations, air-ports, post-offices, banks, temples, historical places, often help the teachers to know the mode of work there. This is useful in teaching.

Visits to markets and shopping areas are always full of new experiences. What is required is an inquisitive mind and a spirit of enquiry.

A resourceful teacher therefore need not wait for some external agency to impart training to him. We are now talking about life-long education. So, any teacher can enrich his professional competence to the fullest extent of his ability.

In-service training programmes for teachers can also be organised in a non-formal way, through correspondence courses, sand-wich courses, etc.

Instructional materials for effective implementation of curriculum

For effective implementation of any curriculum a lot of instructional materials are required to be developed for teachers and pupils. Text-books are for pupils, while handbooks, audio-visual aids are for teachers. Supplementary materials for text-books can be developed for pupils, e.g. books for non-detailed study in languages, work-books, work-cards in work-experience or environmental studies, graded assignments in mathematics, etc. This material can be developed by the teachers concerned jointly, if necessary, in collaboration with or under the guidance of experts, as teachers alone know better their actual needs.

In this respect two practical suggestions may be made. For a poor country like India all schools would not be in a position to purchase sophisticated aids. Teachers, with the assistance of their pupils can develop valuable visual aids. Similarly, every teacher or group of teachers can develop self-learning materials for pupils because it is the aim of our education today to shift our emphasis from teaching to learning.

Many a time, folk-songs, folk-stories, folk games are not found in printed books. Teachers working in certain parts of our country are in a position to collect them. This will also form a part of instructional materials. There is of course little purpose in teaching fishermen's songs in the hilly area of Assam.

One important fact to be mentioned here is that mere teacher-training would not suffice for an effective implementation of any curriculum. Headmasters, supervisors, administrators, members of management may also be suitably oriented regarding school curriculum as they have to play an important role in implementing it.

Many a time, even an educationally sound curriculum is rejected by the general public for want of a correct perspective about it. For example, in Maharashtra, the scheme of conducting 'A' level and 'O' level courses for gifted and average children respectively was rejected because its spirit had not been appreciated by the politicians. To avoid this, the general public need orientation about the curriculum for their children. This can be done through small booklets written in a very simple, non-technical language.

Similarly, separate booklets can also be prepared in a technical language for experts and other people connected with the process of education.

Much wastage can also be avoided if retired teachers are allowed to work at non-formal-education centres. To universalise primary education, we are in need of huge number of teachers. Therefore this group feels that instead of spending money and time on entirely fresh teachers, services of retired teachers can be utilised profitably.

Since ancient times the 'guru' or Acharya was an object of respect and veneration for the rulers as well as the ruled. Today's teacher has lost much of the confidence of the rulers and the people. Can we hope that the teacher of tomorrow will do his best to meet the challenge of present crisis?

GROUP VI

Curriculum Research and Evaluation

MEMBERS

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5.	Shri G. Suryanarayana Murthy (Andhra)	*Recorder*

An overview of the nature of problems that exist at present in the field of education reveals that the children belonging to the under-privileged sections of the society are either quite ignorant of the benefits of education for their self-improvement or do not have any favourable home climate to develop proper attitudes towards education. On the other hand, the parents, steeped in poverty and ignorance, are incapable of understanding the changes in the society and the imperative need for education for their children.

In the present state of rapid change in every aspect, the teacher plays a very vital role in carrying education to the threshold of the child. A proper and purposeful translation of the curriculum into action by the practising teacher will go a long way in achieving the purpose. It is not sufficient on the part of the teacher to do his routine job only. If the teacher has a clear concept of the curriculum, its components, its functioning, he can make it dynamic and innovative. Unless he has got a clear insight and understanding of the various aspects and components of the curriculum and is able to see them progress at a uniform pace and in an integrated manner, either the very structure of the curriculum breaks down or becomes highly lop-sided. He should be constantly aware of the fact that the curriculum is the means for the development of the child as a learner, as a person, as a worker, and as a citizen. Therefore, the teacher, apart from other agencies, can continuously measure the effectiveness of (content)? How are they learning (method)? Does the learning measure up to the expectations (evaluation)?

Sometimes, it is profitable to conduct research or evaluation by a group of teachers from different schools in a cooperative manner on problems and issues which are common to them. Each school separately and even the community itself may conduct research on various aspects of curriculum.

Naturally, the areas which concern such simple studies will be those areas which are either components of the curriculum or with which the curriculum is closely related, i.e., the child, the environment, the community. These studies are essential in making the curriculum progress and function in a proper manner without making it static or non-operational. These studies should not be made for their own sake. These should be highly functional. The teacher should make simple research or evaluation on those aspects which have negative significance in the process of curriculum transaction. For example, if there is no proper development of favourable attitudes towards work or if there is wanton disregard of the rules and regulations of the school, the teacher may conduct a simple research on the pupils concerned to find out the reasons. The researches should also be made in order to enhance the effectiveness of the curriculum in transaction; for example, a detailed survey of the educationally valuable resources in the environment, the socio-economic-cultural structure of the community.

In order to enable the teacher to clearly visualise the various aspects which are vitally concerned with curriculum in transaction and in which possible research and evaluation may be undertaken, a graphic model is indicated on the following page.

The possible areas in which the teacher is to conduct a simple type of research study and evaluation are indicated taking each aspect separately with which the curriculum is related. These are only suggestive. Sometimes the teacher may face a problem in an area which is not suggested here. It should be reiterated that the teacher should concern himself with some areas which affect positively or negatively the opitimum transaction of the curriculum and the information gathered should be applied to resolve the problems that hinder smooth functioning of the curriculum. It should also be noted that the process of research and evaluation is a continuous one. An evaluation and feedback system should be built-in as an integral part of the curriculum development.

The suggested areas of research and evaluation are given below:
The teacher may conduct simple research in the following areas:

(a) The child
(b) the environment

(c) the community
(d) objectives, content, methods and evaluation technique

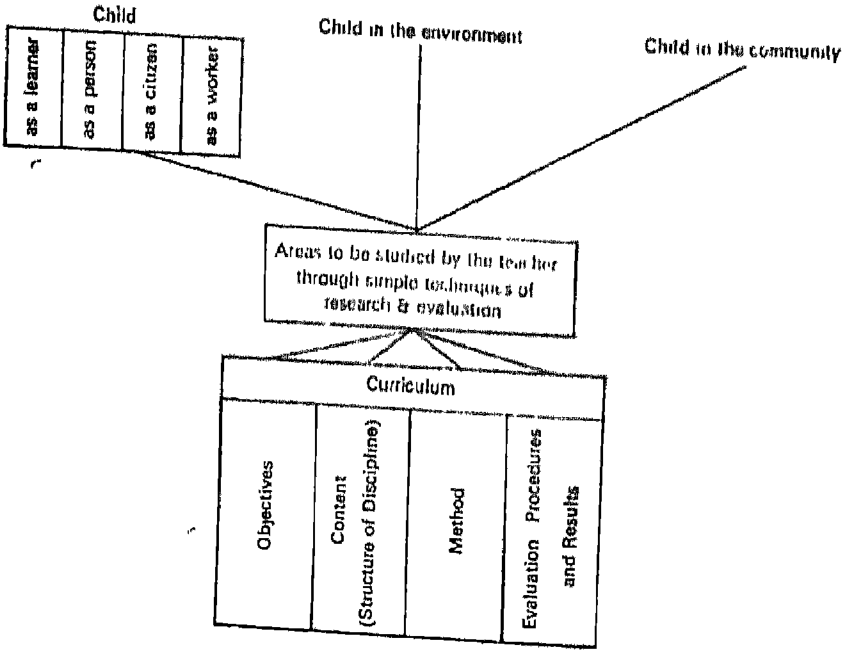
The teacher should always keep in mind the developmental goals of the child as a learner, as a person, as a worker, and as a citizen.

(a) *The child*

(i) *Child as a learner*: The achievement level, socio-economic background, attitude towards school and learning, participation in classroom and other activities, readiness to receive the instruction, development of proper concepts, awareness of his home and surroundings, ability to interpret the natural and societal processse, ability to apply knowledge in various situations, knowing the information and how to locate it, opinions of students about methods, content etc.

(ii) *Child as a person*: Initiative, sense of responsibility, co-operation, tolerance, self-confidence, respecting opinions of others, leadership and obedience, respect for elders, sense of belongingness, open-

Diagram


Child
as a learner
as a person
as a citizen
as a worker
Child in the environment
Child in the community
Areas to be studied by the teacher through simple techniques of research & evaluation
Curriculum
Objectives
Content (Structure of Discipline)
Method
Evaluation Procedures and Results

mindedness, suspended judgements, honest inquiry, etc.

(iii) *Child as a worker*: Attitude towards work, self-help, awareness of the various productive activities in the environment and elementary knowledge about the processes of work, healthy respect for the workers who serve the community, the extent of involvement of the child in different types of work.

(iv) *Child as a citizen*: Awareness of the basic principles of our constitution, respect for an egalitarian society, proper outlook on national integration and international understanding, respect for the world organisations, awareness of the benefits from the community and an obligation to serve the community in his own way, respect for the democratic processes, respecting the rules and regulations of the school, etc., respect for the national anthem and symbols, respect for the public property and public sense of duty.

(*b*) *The environment*

The study of the natural and social environments for the purpose of locating the resources for utilisation in teaching such as flora and fauna, the geographical features, productive activities, services such as shops and markets, fairs and festivals, places of worship, kinds and places of recreation, various types of houses, dresses, transport and communication facilities, examples of interaction between man and environment, examples of interdependence in the community, buildings and structures of historical and social significance, studying the resources of the environment for gearing them for the development of community.

(*c*) *The community*

Finally background of the child, socio-economic and cultural aspects of the community, relationship between these factors and the curriculum, attitude of the community towards school, expectations and aspirations of the community as a whole, location of areas in which the community requires some guidance and service from the school i.e., campaign for proper sanitation, nutritious food, kitchen gardening, literacy, etc., survey of the needs of the community, identifying the persons who can satisfy the needs of the school in various ways i.e. through materials and services, local occupations, job availability in the community, consumption capacity of the locality.

(*d*) *Objectives, content, methods, and evaluation techniques*

Lastly, research needs to be done by the teacher on the objectives, content, methods and also the evaluation techniques. Again, these have to be sample studies which would enable the teacher to understand the relationship between objectives, content and methods of teaching. New evaluation techniques have to be evolved to assess the child's progress in the new types of material now being included in the curriculum. Research should thus become an in-built process of curriculum in transaction.

Tools and techniques of evaluation

1. Survey of:
    (a) local human and physical resources
    (b) local economic growth capacity
    (c) local natural assets
    (d) local needs
    (e) local goods available
    (f) local occupations and job availability
    (g) local consumption capacity
    (h) local availability of raw materials
2. Interview with parents, children, community workers
3. Personal records of children
4. Observation
5. Records of children's family background
6. Records of children's achievement on teacher-made tests
7. Records of children's achievement on standardised tests
8. Rating scales for various personality traits of children
9. Interest inventories for children
10. Interest inventories for community workers and people in general
11. Observation techniques
12. Questionnaires for various people of the community regarding different aspects of curriculum expectations, aspirations, etc.
13. Questionnaires for children regarding different aspects of curriculum expectations and aspirations
14. Anecdotal records for children
15. Historical records necessary for the purpose
16. Attitude Scales
17. Checklists
18. Sociograms, sociometry

Points for consideration

1. Scientific approach having reliability and validity
2. At regular intervals
3. Unsophisticated
4. Open to the public

5. With the help of local personnel
6. Results should be open for public discussion
7. Results of the study conducted by the teacher should be suitably used to bring about changes in curriculum, education and training.

The S.I.E. can help in the preparation, training and follows-up of the research and evaluation work of the schools and teachers.

SECTION V

EVALUATION OF THE WORKSHOP

1. A REPORT ON THE WORKSHOP
2. ANALYSIS OF THE EVALUATION BLANK

A Report on the Workshop

A. John Louis

Participants from various parts of India - from the dizzy heights of Meghalaya, Manipur, Mizoram and Tripura, from the arid plains of Bihar and Andhra Pradesh, from the hospitable State of Rajasthan, from the sunny slopes of Kerala, from the industrial State of Maharashtra, from the sea-coast of Pondicherry, from Orissa, from Gujarat, from the wonderful land of the Tamils, from Madhya Pradesh, from Uttar Pradesh, from the bright shores of Goa, from Chandigarh, from Karnataka and Haryana- assembled at the State Institute of Education, Udaipur to deliberate on the problems concerning curriculum at the Primary and Secondary stages.

From the first day, we found in our coordinator Dr. Mehdi a fascinating personality of immense potentialities, guiding and directing the destinies of this workshop with a firm grip on the situation, ever vigilant, ever watchful, ever kind, ever resourceful. His love for us, his sense of humanity and consideration, his total dedication to the cause, which is so dear to him, his repeated emphasis on 'curriculum in transaction' set the tone of the workshop. Coupled with his vigilant eye on the academic side of the work we had the administrative and organizational acumen of Shri B.L. Vyas, Director of S.I.E., unassuming, simple, but firm in his approach to work. He made us feel at home and if this workshop has succeeded to this extent, considerable credit should go to Shri B.L. Vyas also.

The inaugural session brought us face to face with two more formidable personalities—the Hon'ble Minister of Education, Shri B.L. Sharma, who gave the inaugural address and Dr. Shib K. Mitra, Director, NCERT, who delivered the key-note address, which was a wonderful exposition of our present day educational problems.

After hearing Dr. Mitra's speech it dawned upon us, that this workshop was not going to be an easy one, but full of intellectual excitement and thrill, and indeed it finally proved to be so.

Case-studies

From the third day onwards we settled down to serious business.

Everyday we were asked to present case-studies from different states on the state of affairs in education in the different parts of the country with special reference to curriculum.

It was a wonderful experience to listen to one participant after another telling with pride the achievements of his/her state in the realm of education, apologetic of the failures, and hopeful of a brighter future. It was heartening to note that the participants however patriotic they might feel of their states, were aware of their shortcomings and did not attempt to conceal them.

Every case-study was followed by searching questions and useful discussions. Participants were interested to know, for instance, more about Mizoram which presented an interesting picture of the non-formal aspect of education.

Out of these case-studies emerged a kaleidoscopic picture of the state of education in this vast country of ours.

While the presentation of the case-studies was going on, panel discussions were introduced by learned educationists which played a very useful role in highlighting the problems, and clarifying various issues.

Panel discussions

We were given an opportunity to see and listen to eminent professors and practitioners in education. Their exposition of the problems of education was indeed illuminating. The participants were provoked to react and think, to ruminate and contemplate.

We cannot but make a special mention here of the name of Dr. M S. Mehta, the Grand old Man of Rajasthan. It was a moving experience to see that venerable man, bent with years but young in heart, climbing the steps of this building to meet us and share with us his profound ideas, tested and sharpened during the decades of his rich and variegated life. Out of the rich storehouse of his accumulated knowledge came gems of truth— ideas that were startlingly revolutionary and new, coming as they did from a man of action and vision, belonging to a generation fast fading out. His views on vocationalisation of education were decisive and categorical. His unconventional approach to the problems of education were refreshingly interesting and educative.

Field trips

In the midst of serious deliberations and pre-occupations we were taken thrice to different parts of this historic city of Udaipur.

Our first foray outside the city was Chittorgarh, that old fort that tells a grim tale of wars fought long ago. The reception we had there from the local teaching community was unique and unusual. The programme arranged by them had educational value also.

Next we were taken to Mt. Abu, the celebrated hill-resort in Rajasthan and the Delwara Temple, which looked like a beautifully carved golden casket. It was an experience that we were not prepared for. We were baffled with wonder at the exquisite carvings in marble.

Our third trip was to Haldighati, Nathadwara, and Ekalangji Temple. To see the battle field of yore, to tread on the hills and plains where thousands of warriors had shed their precious blood was an unforgettable experience. We are very thankful to Prof. Mehdi and Mr. Vyas for having arranged these field-trips for us.

Group reports

After the presentation of case studies and after listening to panel discussions, we were divided into six groups and started discussions on the following six topics :

1. Curriculum development in Social Sciences at primary and secondary stages.
2. Curriculum development in Science and Mathematics.
3. Curriculum for rural development.
4. Vocationalization of education.
5. Teacher, teaching techniques and materials and the curriculum.
6. Curriculum research and evaluation.

We have produced six reports on these subjects. Prof. Mehdi was very right when he cautioned us not to copy from any book but insisted on originality in our presentations. This we have done—six original documents born out of our own thinking and deliberations. Our deliberations and discussions, our reports and suggestions will all appear in a printed form in the shape of a valuable document entitled "Curriculum in Transaction".

We are taking back with us the pleasentest memories of this workshop, and also the hope that our labours have not been in vain. We look forward with hope that something will begin to happen now which would revolutionise, in course of time, the process of curriculum renewal in different parts of the country.

We are thankful to the NCERT for giving us this opportunity for entering into a battle of the minds, so exhilarating, so illuminating, and so rewarding.

Analysis of the Evaluation Blank

An evaluation blank (Appendix V) was supplied to each of the participants to record their free and frank opinion without any reservation on different aspects of the In-country National Training Workshop in Curriculum Development held from May 1 to 27, 1978 at the State Institute of Education, Udaipur, Rajasthan. They conveyed their reactions very categorically which are enumerated below.

1. Objectives

There were six objectives for this workshop. 36% of the participants have stated that these objectives were achieved very well, whereas according to 50% these were achieved fairly well and 14% felt that they were achieved only partially. A very pertinent suggestion was made for evolving strategies to establish close relationship among different agencies involved in curriculum regeneration and implementation.

The participants were asked to suggest certain additional objectives for the workshop. 38% accepted this challenge. The following are some of their suggestions:

(i) To work out practical and concrete suggestions for implementation of the curriculum.

(ii) To examine the reasons for the success and failures in achieving the educational goals and social reformation through the school curriculum.

(iii) To provide experience in actual construction of curriculum.

2. Course design

(i) Regarding the themes that were found useful and relevant to the planning and development of curriculum, the participants differed in their views. All the themes that found a place in the workshop were found useful by one or the other, but themes pertaining to rural development, community involvement, new trends in curriculum development, vocationalisation of education were found to be of greater usefulness to the participants.

(ii) The themes that were found useful for providing richer background on the topic were mainly new trends in curriculum development, vocationalisation of education, and community participation.

It may be observed that almost all the themes had been found useful by the participants in one way or another, but in a few responses the participants had expressed their dis-satisfaction about the way in which topics like curriculum research and evaluation, and teacher participation in curriculum were dealt with on the plea that they were more theoretical.

In continuation of the above a number of new topics themes were suggested by the participants. They may be grouped as follows.

(i) Promotion of national language through curriculum.

(ii) Review of teacher-training programme.

(iii) How curriculum is developed in countries like America, Russia, China and the developing countries.

(iv) Non-formal education for the drop-outs.

(v) Causes for failure of certain good education systems such as Basic Education, Multipurpose Scheme, etc.

3. Course methodology

Regarding the talks and discussions in connection with the inter-country visits, 80% of the participants were satisfied with respect to provision of time and opportunities provided to the participants to participate in the discussion.

Regarding case studies, only about 12% felt that presentation of case studies by participants were not well-planned by them before presentation, whereas almost 100% felt that they were stimulating and beneficial.

13 participants opined that they could know the problems faced by different states in the preparation and implementation of the curriculum and 7 others said that they were very much enlightned and some of their vague ideas were cleared.

Panel discussions

These had been appreciated by almost all the participants in all their aspects.

Group discussions

Both with regard to the formation of the groups and the arrangement to draw upon resources, 94% of the participants had expressed their satisfaction.

The participants were asked whether the arrangements for the groups to draw upon resources (library resources/Faculty members) were adequate. The participants in general felt that there should have been a resource person attached to each group for providing them guidance as and when required. There was a general feeling that the library facilities could be augmented.

4. Work-load

About 15% of the participants felt that the work-load was rather heavy whereas others felt that it was quite adequate.

5. Organisation

All the participants agreed that the workshop was well-planned and systematically organised and they expressed that they were equipped with adequate experience to shoulder such responsibilities in their own states.

Suggestions were invited from the participants for improvement of the quality of such workshops in future in regard to course design, organisation, including course methodology. Some of the important suggestions received from them are as follows :

(a) *Course design*

Language, physical education and the subjects having practical components should also be included in such workshops.

Since curriculum process is very much dependent upon implementation at the school level, the work environment of single-teacher school should not be overlooked. It was, therefore, suggested by the participants that the limitations involved in the single-teacher schools should also be considered in framing any workable curriculum.

(b) *Organisation*

As revealed from the responses the panel discussions could have been made more purposeful by providing the participants with outlines or detailed materials by the panel members in advance. There were also suggestions for a comparative study of curriculum experiences and innovations in the country and abroad.

(c) *Methodology*

Besides the methods of group discussion, panel discussion, case study arrangement of a film-show on curriculum development, exhibition would have strengthened the methods adopted in the workshop.

6. Documentation

About 24% felt that the background materials supplied earlier were extremely useful, whereas others felt that they were quite useful.

7. Follow-up

All the participants agreed that this workshop generated ideas which would help them in the follow-up work in curriculum development and implementation.

8. Expectations of the participants

55% of the participants felt that their expectations were fulfilled to a considerable extent, whereas the remaining 45% felt that they were met quite satisfactorily.

There was a general feeling that practical orientation in the methods of curriculum development would have enhanced the merit of the training part of the workshop. NCERT as a liaison agency at the centre should see that the important results of the workshop are implemented in the States. NCERT may draw up plans in collaboration with the State governments to organise similar workshops at the State level and the participants of this workshop may be utilized to work there for developing the curriculum. UNESCO may be approached to help in this respect. NCERT may also arrange visits of the participants to the places where innovative practices are being followed. Continuous feed-back should be available from NCERT to the curriculum developers of the States.

Suggestions for follow-up

Suggestions for consideration of different agencies with respect to the development and implementation of the curriculum:

(a) *State Governments*

(i) The State governments should see that the important outcomes of this workshop are implemented/absorbed by the State.

(ii) The State governments should best utilize the curriculum developers oriented in this workshop.

(iii) A corps of curriculum developers in the State should be raised with the assistance and guidance of NCERT.

(iv) A curriculum unit where it does not exist should be set up so that the promotional purpose could be looked after better.

(b) *NCERT*

(i) NCERT should act as liaison agency between the Central and State governments in the area of curriculum planning, development and implementation. particularly where innovative curriculum is tried out.

(ii) In the matter of curriculum development, NCERT should provide necessary guidance to the promotional agencies in the States.

(iii) Since the experience of the States in respect of curriculum development is very limited, there is a great need for curriculum feed-back by the NCERT.

(iv) NCERT should play the role of a clearing-house in all matters on curriculum and its development and implementation strategies.

(v) To develop fraternal ties and ensure close co-operation among the curriculum developers of the country, it is felt that there should be a professional organisation to think, work and evaluate curriculum practices in the country and abroad and suggest suitable innovations in the curriculum.

(c) *UNESCO*

(i) Involvement of the UNESCO in curriculum development particularly for the developing countries is a happy augury. Its increased participation in curriculum development process will be extremely beneficial. Therefore, the quantum of assistance in the form of funds and human resources should be enhanced in the coming years.

(ii) Liberal arrangements should be made for the visits of the participants of this workshop to the countries where curriculum innovations are being tried out.

Programme of Valedictory Session

Invocation	
Welcome	Shri B. L. Vyas
Resume of the Workshop	Dr. (Miss) M. Shah
Participants' Impressions	Miss Margaret Behera SIE, Bhubaneswar, Orissa
	Mr. J. C. Dutta SIE, Tripura
About the ACEID Programme	Dr. Thamrong Buasri Curriculum Specialist UNESCO Regional Office, Bangkok, Thailand
Valedictory Address	Dr. D. S. Kothari
Vote of Thanks	Prof. Baqer Mehdi NCERT

Valedictory Session

Dr. D.S. Kothari, noted educationist, was the chief guest. Dr. Thamrong Buasri, curriculum specialist from the UNESCO Regional Office for Education in Asia, Bangkok, Thailand, who came to attend the last phase of the Workshop was also present.

1. Shri B.L. Vyas who was a member of the Resource Faculty Team welcomed the chief guest, and Dr. Thamrong Buasri and others who attended the function.

2. Dr. (Miss) M Shah gave a resume of the workshop and thanked the participants and the members of the Faculty Team for their excellent cooperation and hard work during the 27 days of the workshop. She also thanked the UNESCO authorities for initiating such a useful programme.

3. Two participants, namely, Miss Margaret Behera from the State Institute of Education, Orissa, and Shri J.C. Dutta from the Institute of Education, Tripura, gave their impressions of the workshop. Miss Behera said, "The distinguishing feature of the workshop is its democratic approach. The participants were given abundant liberty to put questions." Shri Dutta was happy that emphasis was laid on the practical aspects of curriculum development and implementation, and a down-to-earth approach was taken during all the discussions. The topics selected for discussion were relevant and covered a wide spectrum.

4. After the participants had given their impressions, Dr. Thamrong Buasri spoke to the audience about the Asian Programme of Educational Innovation for Development. He started by saying that the National Workshop on Curriculum Development was in fact the country's programme and not a programme of UNESCO, because it had been developed, planned and organized by a member-State and would be implemented by it as in the case of other member-States involved in this programme. UNESCO has provided facilities for executing this programme at the inter-country level as planned by the member-State. A team of five national experts from India was sent to four Asian countries to study and observe the curriculum development programme there. The present workshop is a continuation of the same programme at the national level. He was happy that representatives from various States/Union Territories of India had assembled, shared their experiences, thrashed out problems among themselves and had tried to come out with some useful ideas which they would now like

to implement. Dr. Buasri said that this was one of the important considerations within the philosophy of Asian Programme of Educational Innovation for Development.

Referring to curriculum development, he said that it is a continuous process which has to be taken up on a regular basis. The process includes planning, developing, executing and evaluating the programme. It is a cycle which goes on and on and leads to more and more improvement. An important thing in the Asian programme, Dr. Buasri said, is that we are trying to develop a community of Asian educators who would intelligently tackle their own problems. In the past we always relied on the wisdom of experts from outside; ours is the first kind of programme in which Asian resources, Asian competencies and Asian expertise will be developed for use in the region. Under the Asian programme we are having about 75 associated centres, and in the near future we shall be having about 4,000 to 5,000 specialists to help us all the time and we will not have to rely on the wisdom of others. Even now, for all the activities organised under the Asian Programme, we have experts from the Asian community.

In the end, on behalf of UNESCO and on his own behalf Dr. Buasri expressed his gratitude to the Government of India, National Council of Educational Research and Training, State Institute of Education, Rajasthan, and participating States/Union Territories for their collaboration. He also thanked the members of the Faculty Team for successfully organising the programme. He expressed the hope that this workshop would start a chain reaction and many more similar workshops would be organised at the State level.

5. The chief guest, Dr. Kothari, then gave his veledictory address. He spoke for more than an hour on various problems concerning education. He stressed the importance of knowledge in the present-day world, and said, "Today's world is knowledge-based, which means obviously that whatever may be the problem facing a country, whatever may be the task facing a nation—whether it be the task of agricultural development, whether it be the task of economic growth or be a question of national security—whatever be the problem before us, it can only be solved on the basis of knowledge and no other basis". This, he said, is a great challenge to education today and adds to our obligations and responsibilities. We have to think about this carefully. Dr. Kothari then explained how education, research and productivity (E.R.P.) were closely inter-linked in the total process of educational development. Whatever may be the level of education, research, he said, is an essential ingredient of educational progress. By research he especially meant the research attitude that he considered much more important than anything else in education. As regards productivity, it was necessary that education should lead to

productivity. In fact, education must make a direct contribution to improve the productivity of the nation. If education fails to improve productivity, sooner or later funds for education will suffer. Coming to curriculum, he said, that we must realize how little we know about what curriculum is, what a good curriculum should be, and what we should do to make a good curriculum. It is through a good curriculum that we can really make the relationship between E.R. and P. more meaningful and can help bring about a change in the life of the individual. What is missing from education today is 'wisdom', which is so essential for improving the quality of life. What he implied was that we need today education that would help develop 'good' persons, 'good' citizens, and 'good' workers, besides 'good' learners. He referred to the most advanced and affluent nation, namely, the United States of America and pointed out that something significant in the curriculum there seems to be missing. That something we may call 'wisdom', which is the source of all that is 'good' in life. Unless E.R.P. is linked to wisdom, there is hardly any possibility of improving the condition of life. He quoted Buddha as saying "There are two things : 'Truth' and 'Self'. "Where 'Truth' is, 'Self' is not. Where 'Self' is, 'Truth' is not." Truth is knowledge in the real sense. Where there is selfishness, knowledge becomes an instrument for exploitation, particularly exploitation of the under-privileged. With the rapid expansion of knowledge, it is necessary that it must be linked with wisdom, otherwise exploitation is bound to take place. As knowledge is increasing, it is curious to see that destructive forces are also becoming more and more powerful. The reason is that we have de-linked knowledge from wisdom. It is high time we gave serious thought to this problem. In developing a curriculum, we have to be very much alert about it. Character-building as an important aim of education must be kept in the focus of our attention. Gandhiji was right when he defined primary education as character-building.

Coming to the fundamentals of curriculum-making, Dr. Kothari stressed the importance of knowledge about the child and the learning process. Child's curiosity to ask questions and explore his environment should be given ample opportunity for development. His creativity and sense of wonder should not be smothered by imposing upon him a drab and rigid curriculum. It is unfortunate that in most cases we grossly under-estimate the potentialities of the child. It is our wrong approach that makes the child feel that knowledge is a 'load'. Once we are able to create in him 'respect for knowledge', nothing should be beyond him.

6. Prof. Baqer Mehdi proposed a vote of thanks to the chief guest, Dr. D.S. Kothari for sparing his valuable time to deliver the valedictory address. He also thanked Dr. Thamrong Buasri for coming all the way from Thailand to attend the last phase of the workshop. Dr. Buasri's

presence at the workshop was very encouraging to the participants. He thanked Shri B.L. Vyas for making all the arragements for holding the workshop at the State Institute of Education, Udaipur, Rajasthan. In the end he thanked the participants for making a very useful contribution to the workshop.

APPENDICES

Appendix I : List of Participants

Appendix II : Resource Persons for
Panel Discussions

Appendix III : Editorial Committee

Appendix IV : Recorders of Panel Discussions
&
Themes of Panel Discussions

Appendix V : Evaluation Blank

APPENDIX - I

List of Participants

A. States

1. Shri G. Suryanarayana Murthy
   Lecturer
   SCERT; Govt. of Andhra Pradesh
   Hyderabad (Andhra Pradesh)

2. Shri S.V.V. Raghavacharyulu
   Lecturer
   SCERT, Govt of Andhra Pradesh
   Hyderabad (Andhra Pradesh)

3. Dr. Mehtab Ali
   Principal
   Primary Teacher Education College, Mahendru
   Patna-6 (Bihar)

4. Dr. G.L. Mandal
   Reader
   S.I.E., Patna-6 (Bihar)

5. Dr. (Miss) Mohendrika Bhatt
   Reader
   S.I E., Ahmedabad (Gujarat)

6. Shri V.K. Dhotre
   Lecturer
   S.I.E., Raikhad, Ahmedabad (Gujarat)

7. Shri Yoginder Kumar
   Lecturer
   S.I E., Haryana, Gurgaon (Haryana)

8. Shri C.G. Venkataramana Setty
   Lecturer
   Deptt. of State Educational Research & Training
   B.P. Wadia Road, Basavanagudi
   Bangalore-4 (Karnataka)

9. Shri S.R. Mylaraiah
   Technical Assistant
   State Bureau of Educationl and Vocational Guidance
   Department of State Educational Research & Training
   B.P. Wadia Road, Basavanagudi
   Bangalore-4 (Karnataka)

10. Shri T.P. Chandrasekhara Kartha
    Instructor in Science

Institute of Primary Education
Ramavarmapuram, Trichur (Kerala)

11. Smt. Sushila M. Bapat
Professor
State Institute of Education, Maharashtra State
Sadashiv Peth, Pune-30 (Maharashtra)

12. Smt. C.V. Padhye
Lecturer
S.I.E., Government of Maharashtra
Pune (Maharashtra)

13. Shri L. Samarendra Singh
S.I.E., Imphal (Manipur)

14. Th. Mohendra Singh
Science Consultant, Education Directorate
Imphal (Manipur)

15. Miss G. Lyngdoh
Lecturer, SCERT
Shillong (Meghalaya)

16. Shri Malik Habibur Rahman
Assistant Professor
S.I.E., Bhopal (Madhya Pradesh)

17. Shri R. S. Chauhan
Lecturer
S.I.E., Govt. of Madhya Pradesh
Jahangirabad, Bhopal (Madhya Pradesh)

18. Miss Margaret Behera
Lecturer in Education
State Institute of Education
Bhubaneswar-12 (Orissa)

19. Shri B. Mohanty
Lecturer in Education
State Institute of Education (Orissa)

20. Shri Abdul Haneef,
Assistant Director
State Institute of Education
Udaipur (Rajasthan)

21. Shri Lalit Mohan Tewari
Research Officer
State Institute of Education
Udaipur (Rajasthan)

22. Smt. Kamala Radhakrishnan
Asstt. Professor
S.C.E.R.T., Tamil Nadu
Madras-600006 (Tamil Nadu)

23. Smt. Susila Purushothaman
Asstt, Professor

S.C.E.R.T., Tamil Nadu
Madras-600006 (Tamil Nadu)

24. Shri Jyotish Chandra Dutta
Reader
State Institute of Education
Agartala-799005 (Tripura)

25. Shri Askit Kumar Bhattacharjee
Lecturer
State Institute of Education
Tripura-799005 (Tripura)

26. Shri Nerbhay Swaroop Sharma
Professor
Govt. Central Pedagogical Institute
Allahabad (Uttar Pradesh)

B Union Territories

1. Shri K B. Maini
Lecturer
State Institute of Education
Chandigarh (Sector 20D)
Chandigarh Administration, Chandigarh

2. Shri Vijay Kumar Patnekar
Subject Inspector Languages
State Institute of Education
Aleto Betim, Goa-403101 (Goa, Daman Diu)

3 Shri Zosiama Pachuau
Board of School Education
Aizawl (Mizoram)

4. Shri Louis Vernal
Academic Officer
Board of School Education
Aizawl (Mizoram)

5. Shri A. John Louis
Headmaster
Government High School
T.R. Pattinam, Karikal (Pondicherry)

Note. Seven States, viz., Assam, Himachal Pradesh, Jammu & Kashmir, Nagaland, Punjab, Sikkim, and West Bengal and five Union Territories, viz., Arunachal Pradesh, Delhi, Dadra & Nagar Haveli, Lakshadweep & Nicobar Island could not be represented in the Workshop.

APPENDIX - II

Resource Persons for Panel Discussion

1. Dr. M.S. Mehta
   'Sewa Sadan', Udaipur (Rajasthan)
2. Prof. R.C. Das
   Dean, Academic and Head
   Department of Teacher Education, NCERT
   New Delhi-110016.
3. Prof. H.B. Majumdar
   'Vinaya Bhawan'
   Shantiniketan-731235 (West Bengal)
4. Dr. N. Vedamani Manuel
   Professor and Head of the Department of Education, and Dean,
   Faculty of Education
   University of Kerala
   Thycaud, Trivandrum-14.
5. Dr. K.N. Srivastava
   Principal
   Vidya Bhawan Teachers' College
   Udaipur (Rajasthan)
6. Dr. (Mrs.) Indu Dave
   Professor of Education
   Vidya Bhawan Teachers' College
   'Ashish', 1, Fatehpura
   Udaipur-313001 (Rajasthan)
7. Prof. C.V. Govinda Rao
   Head
   Vocationalization Education Unit, NCERT
   New Delhi-110016
8. Prof. H.S. Srivastava
   Head
   Examination Reforms Unit, NCERT
   New Delhi-110016.
9. Dr. B.K. Passi
   Professor and Head
   University Department of Education
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APPENDIX - III

Editorial Committee

1. Shri Louis Vernal	*Convener*
2. Shri C.G. Venkataraman Setty	*Member*
3. Miss G. Lyngdoh	"
4. Miss Margaret Behera	"
5. Shri J.C. Dutta	"
6. Shri A. John Louis	"
7. Shri G. Suryanarayana Murthy	"
8. Prof. Baqer Mehdi	"

APPENDIX - IV

Recorders for Panel Discussions

	Theme
1. Smt. Kamala Radhakrishnan	(1,2)
2. Miss Margaret Behera	(3,4)
3. Mr. Louis Vernal	(5,6)
4. Mr. C.G.V. Setty	(7,8)

Themes of Panel Discussions

1. New Trends in Curriculum Development both general and with reference to different subject-matter fields.
2. Community Involvement in the Implementations of School Curriculum.
3. Teacher Participation in Curriculum Development – Methods and Strategies
4. Instructional Materials and Techniques relevant for the use of curriculum and implementation.
5. Vocationalisation of Education at different stages- Nature and Methodology.
6. Problems and Issues concerning Universalisation of Primary Education with special reference to Curriculum Planning and Implementation
7. Curriculum Research and Evaluation.
8. Curriculum for Rural Development.

APPENDIX - V

Evaluation Blank

Name of the participant .

State he/she represents :

This evaluation blank is meant to seek your opinion and study your reactions on different aspects of the *In-country National Training Workshop in Curriculum Development* which you have attended. Where the items are of the Yes/No type or require a rating on a 3-or 5-point scale, you will please put a tick mark in the appropriate box. In other cases you will please write down briefly and legibly your reactions or suggestions as required. Please record your opinion in a free and frank manner without any reservation. Your considered opinion is what is invited, even if it is critical.

1. Objectives

The Workshop has been organised to achieve the following objectives :

(a) to share inter-country and intra-country experiences through panel discussions;

(b) to explore and identify innovative curriculum practices and examine their suitability in the Indian conditions ;

(c) to design innovative projects and plan for curriculum regeneration focussing on education for development;

(d) to plan for the changes to be brought about in the content of the subjects of study and in the methods and approaches of studying these subjects ;

(e) to evolve a programme in which education could be related to work so as to draw out of it the best in terms of skill and attitude development ; and

(f) to evolve evaluation strategies appropriate to educational goals of pupil development and social transformtion.

(i) To what extent do you think the above objectives have been realised?

	Very well	*Fairly well*	*Only partially*	*Not even partially*	*Not realised at all*
(a)	☐	☐	☐	☐	☐
(b)	☐	☐	☐	☐	☐
(c)	☐	☐	☐	☐	☐
(d)	☐	☐	☐	☐	☐
(e)	☐	☐	☐	☐	☐
(f)	☐	☐	☐	☐	☐

(iv) Would you have suggested any other objective/objectives for the Workshop? Yes/No. If yes, state your objective/objectives:

2. Course Design

(i) Please list the themes that you found particularly useful and relevant to the planning and development of curriculum.

(ii) Please list the themes you found particularly useful for providing richer background on the topic

(iii) Please mention topic or topics which you did not think to be of much use or relevance.

(iv) Are there any other topics/themes which you would have liked to be included in the workshop? If so, please list them below.

3. Course Methodology

(a) *Talks/discussions in the presentation of experiences of the Inter-country visits by the Indian Team.*

(i) Did you find the talks/discussions fairly satisfactory?

Yes ☐ No

(ii) Was the provision of time for talks and discussions, on the whole, adequate?

Yes ☐ No ☐

(iii) Were opportunities provided to the participants to take part in discussion?

Yes ☐ No ☐

(b) *Presentation of Case Studies and discussions:*

(i) Did you find the presentations of Case Studies well planned?

Yes ☐ No ☐

(ii) Did you consider the presentations stimulating?

Yes ☐ No ☐

(iii) Was the discussion on case studies beneficial?

Yes ☐ No ☐

If yes, in what way?

(iv) Was the time budgeting, on the whole adequate for the presentation and discussion of case studies?

Yes ☐ No ☐

(v) Was there enough opportunity for every participant to take part in discussion?

Yes ☐ No ☐

(c) *Panel Discussions*

(i) Did you find the panel discussions well planned?

Yes ☐ No ☐

(ii) Did you consider them stimulating and useful for providing enriched thinking on the theme discussed?

Yes ☐ No ☐

(iii) Do you think that on the whole the exposition of the different themes was satisfactory?

(d) *Group Discussions*

(i) Did you find the group formation, on the whole, based on sound criteria?

Yes ☐ No ☐

(ii) Did you feel that the amount of freedom given to participants for group discussion was really conducive to free exchange of ideas and useful outcomes?

Yes ☐ No ☐

(iii) Was the time allocation for group discussions, on the whole adequate?

Yes ☐ No ☐

(iv) Were the arrangements for the groups to draw upon resources (library resources/faculty members) satisfactory?

Yes ☐ No ☐

Any further comments?

4. **Work Load**

Considering the total work-load of the programme, would you judge it to be:

Too heavy	*Rather heavy*	*Quite adequate*
☐	☐	☐

5. Organisation

(i) Do you think that the Workshop, on the whole, was well planned and systematically organised?

Yes No

Any further comments?

(ii) If, upon your return, you are called upon to organise a similar workshop in your state, would you on account of the present experience be able to shoulder this responsibility confidently?

Yes ☐ No

(iii) If you have any suggestion for improving the quality of such workshops in future in regard to the following, please briefly mention them

(a) *Course design*

(b) *Organisation including course methodology*

6. Documentation

How did you find the Workshop documentation, such as background materials provided to you at the beginning of the workshop and later during the Workshop?

Extemely useful	*Useful*	*Not very useful*
☐	☐	☐

7. Follow-up

Do you think that this Workshop has given you ideas which would help you in follow-up work in curriculum development and implementation?

Yes ☐ No ☐

What are your suggestions for follow up work?

8. Your Expectations

(i) Were your expectations from this Workshop fulfilled?

To a considerable extent	*Quite satisfactorily*	*Not much*
☐	☐	☐

(ii) What more did you expect from the workshop, if at all?

Dated.............................. Signature ....

Place ....